The Journal of the American Medical Association

VOL. XXXIII CHICAGO, ILLINOIS, DECEMBER 9, 1899. No. 24.

Original Articles.

EARLY RECOGNITION OF PULMONARY TUBERCULOSIS.*

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With the advent of Koch's immortal discovery of the bacillus tuberculosis it was thought by many that the problem of the early recognition of consumption had been solved. But the more careful physician soon realized that, while the presence of the tubercle bacilli in the sputum would confirm beyond a doubt his diagnosis of a tubercular disease of the respiratory tract, not finding them at one, two, or even more bacteriologic tests could not make him set aside conclusions arrived at by a careful physical examination.

If we consider the matter carefully we must admit that in very early cases of pulmonary tuberculosis the expulsion of bacilli with the expectoration, which is at that time exceedingly rare, can hardly be expected. There must be a disintegration of the tubercle before we can assume that the bronchial or pulmonary secretions should contain the specific organism of tuberculosis.

Koch's next most important discovery, the use of tuberculin as a test of the presence of a tubercular condition, is certainly of the greatest diagnostic value in the bovine race, and thus indirectly of incalculable prophylactic benefit to mankind. But the utility and wisdom of the injection of tuberculin for the purpose of diagnosing a disease in the human race, I for one dare to doubt. I know that, in making this statement, I am at variance with many reputable and conscientious practitioners; but I also know that I do not stand alone in my convictions, and notwithstanding the criticisms which I have encountered, I do not hesitate to repeat here what I have said in connection with this subject in my recent book[1] on tuberculosis: "Three, five or even ten milligrams of tuberculin may in nine hundred and ninety-nine cases do nothing but reveal a latent tuberculosis; but in the thousandth case it may cause an unexpected generalization with a fatal result. When one has witnessed such a generalization, the desire to use tuberculin for diagnostic purposes in the human race is diminished."

It was no less an authority than Virchow who first warned against the use of tuberculin, for the very reason that he believed he had demonstrated the fact that this substance arouses the latent tubercle bacilli, causing a mobilization of an army of enemies which had slumbered peacefully. A drug or any other substance which, when introduced into the system, is capable of bringing about a rise of temperature sometimes as much as 4 degrees above the normal, and which through the circulation will reach the tuberculous deposits, if such are present, irritating these latent tubercles into an active process of inflammation, must be considered a dangerous thing. Ambler of Asheville, N. C., in an article on this subject, asks whether any physician would be willing to risk the consequences of such a method of diagnosing a disease. And, addressing physicians directly, he says: "Do you believe you would carry out such a procedure in your own person under such possibilities? If you would not, you have no right to use it on your patients."[2]

And now let us ask, is the reaction obtained after the injection of tuberculin an absolute proof of the existence of a tubercular disease? It is well known that a reaction can be obtained in cases of lepra. Joseph, Kaposi, Arning,[3] Goldschmidt,[4] Babes and Kalendero,[5] and others have reported cases of that kind; but the analogy existing between lepra and tuberculosis probably accounts for this phenomenon. In a paper read before the medical society of the hospitals of Paris, Professor Netter[6] said that he had observed the characteristic reaction after injection of tuberculin in twenty-seven out of a hundred cases of individuals afflicted with other than tubercular diseases of the lungs. Neumann of Vienna, and Straus and Teissier of Paris,[7] had occasion to see the tuberculin reaction in purely syphilitic subjects. Billroth and von Eiselsberg observed reaction in actinomycosis and Trasbot in a case of cancer. Klebs, Jr., Chicago,[8] claims to have had a reaction in every case of chlorosis. Would anyone dare to say that every case of chlorosis must of necessity be of a tuberculous nature?

The natural serums obtained from the dog or goat, or the artificial serum prepared according to Hayem's formula, which were used with the hope of being less dangerous and perhaps more certain than the tuberculin, have proved in the hands of some[9] to be fully as dangerous, and in the hands of others[10] totally unreliable.

What other resources have we at our disposal to diagnose the beginning of pulmonary tuberculosis? I am glad to say these means are still numerous, and I will discuss them, not in the order of their importance, since really only the combination of several means can give us proof that our diagnosis is correct, but rather in the order of their adaptability to the use of the general practitioner who has not always easy access to the bacteriologic or electric laboratories.

In the presence of an individual in whom we suspect the beginning of pulmonary tuberculosis we must first study the anamnesis and bear in mind all that past experience in phthisiology has taught us. Man is more disposed to consumption than woman, except a woman who has gone through many childbirths in rapid succession; the poor and underfed more frequently fall victims to consumption than the rich and well nourished; the single more often than the married. According to some authors, red-haired individuals are more exposed to pulmonary tuberculosis than those having brown, blond or black hair.

*Read before the New York County Medical Association, Nov. 20, 1899.

While we should overthrow the erroneous notion that the red-haired individual is more exposed than the blond or brunette type, it is certainly true that persons with very white skin, no matter what the color of their hair may be, if the chin, lips, pubis or arm-pits are covered with reddish hair, very often have a predisposition to consumption. Hippocrates,[11] Galen,[12] Razes,[13] Daremberg the elder,[14] and of recent authors Behier and Hardy[15], Beddoe, Landouzy[16], Dewèvre[17] and Mahoudeau[18] have written on this subject; but the distinction between the read-headed and only partially red-haired individuals has not been made clear except in the works of Hippocrates and Razes. A recent article by Armand Delpeuch[19] decides this interesting question in favor of Hippocrates, and very strongly refutes the conclusions of Landouzy, who reports having found from 75 to 100 per cent. of the red-haired individuals in his services at the Cochin and the Charité hospitals to be tuberculous. Landouzy commits the same error as many others in calling these patients a Venetian type, red hair being not by any means characteristic of the Venetian population.[20] Delpeuch makes a clear distinction between the red-haired—*erythrisme*—and the red-bearded —*erythrisme partiel*—individuals. He found that many simply red-haired individuals were entirely free from a tuberculous taint, but among 57 patients who had either blond, brown or black hair, and at the same time lips, chin or pubis covered with reddish hair, he found 52 to be distinctly tuberculous. Long before Delpeuch, a Scotch author, John Beddoe[21] had already demonstrated that red-headed individuals are not especially exposed to tuberculosis.

We will recall the professions and trades which are most exposed to consumption, and in this respect I know of no better guide than Tatham's excellent table which shows us that the agriculturist is least and the printer most exposed to pulmonary tuberculosis. The accompanying table will show the comparative mortality from tuberculosis in various occupations.

Occupation.	Phthisis.	Other diseases of respiration.	Both together.	Percentage of Phthisis to all diseases of respiration.
Agriculturist	106	115	221	48.0
Engraver, artist	146	133	279	52.3
Shopkeeper, class	172	178	350	49.1
Butcher	195	209	404	48.3
Commercial clerk	218	172	390	55.9
Watchmaker	234	193	427	54.8
Saddler	248	169	417	59.5
Shoemaker	256	181	437	58.6
Draper	260	181	441	59.0
Tailor	271	195	466	58.2
Hairdresser	276	213	489	56.4
Tobacconist, tobacco manufacturer	280	181	461	60.7
Hatter	301	210	511	58.9
Musician	322	200	522	61.7
Bookbinder	325	218	543	59.9
Printer	326	214	540	60.4

We know that pulmonary consumption develops most frequently between the ages of 17 and 35.

In inquiring into the history of our patients we should delicately and carefully deal with the subject of a possible hereditary disposition, so as not to convey to the patient the idea that because some one in his family has died of consumption, he is doomed to succumb to it. Permit me to here remark, incidentally, that in my experience nothing is often more difficult than to dissuade a tuberculous invalid from this preconceived idea, probably brought about by a popular notion and confirmed by questions asked him on that subject by every physician to whom he may have applied for counsel. Direct questioning as to the cause of the death of parents or near relatives should be avoided; one should rather endeavor to discern the hereditary tendency by exclusion. If we consider the rare occurrence of bacillary transmission on the one hand, and, on the other, how really few families there are wherein someone has not died from consumption or other tuberculous disease, I wonder if it is after all so very important to ply the patient with such questions, especially since an inherited tubercular diathesis does not preclude the chances of recovery. Prof. H. P. Loomis of this city has expressed himself in this respect as follows: "My experience has led me to believe that tuberculous heredity has very little to do with the question of a person's recovery, all other things being equal. Of twenty persons known to me who have recovered from phthisis during the past year alone, nine have pronounced tuberculous histories. One had two brothers and one sister die of phthisis."

The only direct question which I am in the habit of asking a new patient is: "Have you ever come in direct prolonged contact with a consumptive or a patient suffering from bronchial or pulmonary disease? This question is important from two points of view. It may give a clew to show whether the disease has been acquired by infection, and at the same time it will be a topic to start on when directing the patient what to do to prevent transmitting the disease to others. On the other hand, I consider a careful inquiry into the mode of life of the patient, past and present, of great importance. The probably unhygienic environments, a dissipated life, a love for strong liquors, irregularity of meals, great disappointment in matters of love or business, or other depressing factors, all will often give a clew to the origin of an acquired, or to the awakening of a latent, pulmonary tuberculosis. It is well known that many a pulmonary consumption has been preceded by digestive disturbances or typical dyspepsia. Bad eaters are nearly always candidates for consumption. In an unmarried young woman a beginning of irregularity, or a total cessation of menses is not infrequently a preliminary sign of approaching tuberculosis, just as much as the return of it in a patient under treatment should be considered as an evidence of the march toward recovery. But be always on guard when in the presence of a case with vicarious menstruation. Hemorrhage from the lungs in a young girl, even if it happens about the time for her menstrual period, often means the existence of tubercular trouble.

Of the many phthisio-genesic diseases, that is, diseases which often prepare the field for the invasion of bacilli, first come all the severer types of bronchitis, pneumonia and pertussis; next, all the eruptive diseases of childhood and adult life, such as measles, scarlatina, variola, typhoid fever and typhus. Severe grippes, alcoholism and syphilis rank no less high as phthisiogenesic diseases. Pleurisy, especially if followed by effusion, should always be considered with suspicion; for I belive the majority, if not all, of such cases, are of a tuberculous nature.

Bacteriologic research in pleuritic effusion is often very unsatisfactory. Inoculation of the guinea-pig with the serous fluid drawn from the chest is a more satisfactory method when additional evidences of the existence of tuberculosis are desired.

Of subjected symptoms which may be elucidated by questioning the patient, I can offer nothing which is not known to every practitioner. You all have seen this class of patients, and many of them will have told you of their getting tired so easily after a little exertion. As a psychic change the patient will often himself confess an increased irritability, an indifference or dislike to the performance of duties which he formerly loved to do; or again, he himself or his friends may have noticed a decided neurasthenic condition or an inclination to melancholia. But one thing of which the patient hardly fails to speak is his increased tendency to nasopharyngeal or bronchial catarrhs. Cough, dyspnea, superficial or deep-seated thoracic pains, occasional night sweats are other frequent early signs. Of the early cough in pulmonary tuberculosis, I may say that it is usually dry and irritating, observed at first only in the evening on reclining; later the patient has his regular morning coughing spell.

In a very interesting article on "Personal Observations in Pulmonary Phthisis,"[22] McLean explains the cough when reclining, as follows: "The mere change of position from the erect to the recumbent has produced an immediate change in the circulation of the blood and air in the pulmonary structure, disturbing the equilibrium which always exists in healthy chests, controlled by the natural tension through the vasomotors. A temporary passive congestion or hyperemia is produced thereby, due to an insufficient expansion of the finer tubes and vesicles. The blood-pressure being out of proportion to the air-pressure, and the coats of the vessels being overdistended or varicosed from lack of support, the blood-currents come under the influence of an extraneous force, gravity; this never occurs in vessels whose coats are normal, except by complete inversion of the body or in the hypostatic congestions of long illnesses. The change to the recumbent posture immediately causes an increase in the distending force within the blood-vessels and a decrease in the amount of air in the tubes and cells. As a result of this, a backwatering of blood into the bronchial vessels and a sensation of fulness or tickling are perceived in the region of the head of the sternum. The cough that occurs is Nature's own effort to remove this fulness, which it accomplishes at first with only a few long breaths and coughs. If this pathological condition is not relieved early, it goes on until it requires stronger and more prolonged effort in the act of coughing to remove it."

Coughing spells are often brought about by a simple extra respiratory effort through laughing or excited speaking. After a little while the dry cough is superseded by one accompanied with more or less expectoration. From this moment careful bacteriologic examinations for bacilli should be instituted. Of course, you will have asked the patient if he has observed that his sputum was tinged with red, or if he has actually expectorated blood. While I fully acknowledge the very important diagnostic value of pulmonary hemorrhage, large or small, when traumatisms or heart disease can be excluded, permit me to say again, do not let the patient feel that we attach great importance to this occurrence. Rather let us embrace this opportunity to tell our patient that one, or even several pulmonary hemorrhages do not, of necessity, lessen the chances for his recovery. I can not enter into the discussion of the various types of hemoptysis, but I firmly believe with Grancher[23], Dieulafoy[24] and others[25] that there are cases of early pulmonary hemorrhages which are actually a benefit to the tuberculous patient, causing an elimination *en masse* of the bacilli, thus finally effecting a cure. All physicians who have treated a number of tuberculous patients have among their recovered cases some where the first symptom which brought the patient to the physician was a hemorrhage of considerable magnitude. Even the cases where the patients tell us that they have had several hemorrhages, and that they felt better after each one, are not rare, and occasionally we have a chance to confirm a betterment in their condition through a physical examination after an attack of hemoptysis.

While it should be an invariable rule to take the patient's temperature at the first examination, thermometry in early pulmonary tuberculosis is only of value when practiced at regular intervals, for example four times in twenty-four hours, and for several days in succession. It is of especial value in this respect to note the rectal temperature before, and immediately after, a short rapid walk. Little, frequent or persistent elevations of one degree or more, must always be looked on as indications of a pathologic process which may have its origin in a slight tuberculous infiltration.

Not infrequently the patient will complain of palpitation of the heart. Let us here recall that early tachycardia in tuberculous subjects is a most important and, alas, also a very grave symptom.

Murat[26] recently added, to the early symptoms, a new sign which may help us in the detection of phthisis in its earlier stages. During loud and vigorous talking there is a vibration of the affected portion of the lung, recognized by the patient as a more or less disagreeable sensation. This symptom, which is entirely subjective, is explained on the physical basis, a solid body being a better transmitter than air. At times, however, this condition may have escaped the attention of the patient, since its development is slow and not in the least painful. In order to discover it the physician should have the patient make prolonged expirations, accompanied by humming. If there is solidification, the patient will then perceive the vibration of his voice. If the left side is affected it will seem to him that there is a direct communication of the voice between the larynx and that side, while nothing whatsoever is perceived in the right, healthy side of his lungs, and vice versa. Dr. Murat has found this symptom in a number of cases of pulmonary tuberculosis before any subjective signs of infiltration could be elicited. I have since had occasion to confirm the presence of this sign a few times in very early cases.

The *lisere gingival,* or reddish line along the edges of the gums, and the dilatation of the pupil on the diseased side—owing to the irritation of the sympathetic nerve at the root of the lungs—should, according to some writers[27], be included among the important early signs of pulmonary tuberculosis. The fact, however, that one finds those conditions in a number of other affections leads me to consider these symptoms only of importance when concomitant with others.

Before allowing our patient to undress for examination we should always make a careful inspection of the upper air-passages. Not only may all the pathologic conditions which stamp the patient as a candidate for consumption be located there, and by judicial treatment removed, but a careful laryngoscopic examination will often, through the peculiar anemic condition of the larynx and the general appearance of the mucous membrane, give, as Roe of Rochester[28] very happily expressed it, "a very early hint as to the probable existence of tu-

berculosis of the lungs." But the upper air-passages should not only be examined very carefully by rhinoscope and laryngoscope, but the secretion, especially the nasal mucus, should also be submitted to microscopic examination. However, it must be borne in mind that the presence of tubercle bacilli in the nasal mucus in individuals habitually exposed to the inhalation of dust laden with micro-organisms may be of little significance unless additional evidence should corroborate the existence of pathologic conditions. The late Professor Straus of Paris found the nasal mucus of a number of nurses and employees of the Faculty's general hospitals and libraries laden with bacilli, and the most searching physical examination of these men and women did not reveal the slightest sign of tubercular disease[29]. The observing physician will have discovered long before this, and without the aid of any instrument, a pronounced chloroanemic condition, not infrequently seen in early tuberculosis, though this discovery will probably not prevent him from examining the blood later on for the number of red blood-corpuscles and percentage of hemoglobin.

We will finally place the patient on the scales, take his height, and ascertain whether there has been any loss of weight, and if so, since when this has been observed. Here we must bear in mind the splendid work done by Dr. Papillon of Paris[30], presented in such an excellent way to the English-speaking medical world by Prof. H. P. Loomis of this city[31]. I believe I can not do better than quote, textually, Loomis' summary: "Weight, respiratory capacity, and chest measurement have no value in establishing the possibilities of the development of phthisis in themselves, but must be considered in relation to the height of the person, when they furnish three important aids to diagnosis.

"Corpulence is obtained by dividing the weight expressed in pounds by the height expressed in feet (in a normal man this should be 26; in a woman, 23). Thoracic perimeter is found by taking two measurements of the circumference of the chest—one at the moment of forced expiration, the other at the end of forced inspiration. The average of these two measurements should never be less than half the height.

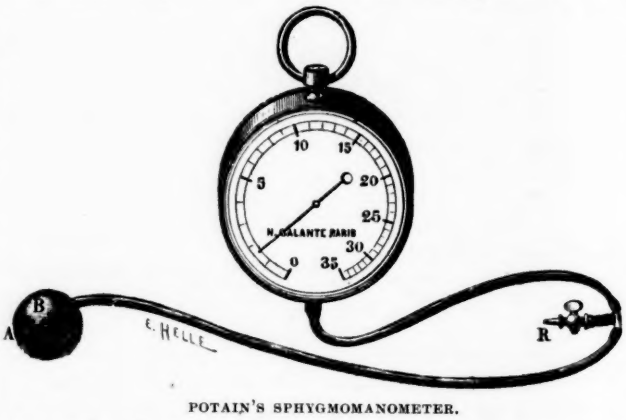
"Vital capacity is the amount of air expressed in cubic inches which can be exhaled after a full inspiration. Normally it should bear the relation to the height of 3 to 1 for a man and 2 to 1 for a woman"—i. e., for every inch of height there should be 2 or 3 cu. in. of vital capacity, respectively.

While some authors, such as Andvord, Loomis and Wells, claim to have recognized a pulse characteristic of the pretuberculous state, I confess that all I have been able to observe is that the pulse is chronically feeble, rapid, weak, and sometimes intermittent, which is characteristic of constitutional weakness of whatever cause. However, taking the arterial pressure with the aid of Potain's sphygmomanometer is a most valuable help in diagnosing an early pulmonary tuberculosis. With the aid of this instrument, which, I am sorry to say, is not much in use in this country, and which I take pleasure in illustrating here, one can easily determine the arterial pressure of the patient.

It is composed of a rubber ball, a transmission tube, a reception tube and the manometer proper. The rubber ball, distended by a pressure of 3 cm., becomes elliptic and has then a length of 3 or 4 cm., with a transverse diameter of 2.5 cm. The interior of the rubber ball is divided into four sections; three of these (A) are strong enough to resist a pressure of 30 cm., while the fourth (B) is much thinner, for the purpose of receiving the radial artery. The little receiving tube with the stop-cock (R) serves to inflate the apparatus for the purpose of having a convenient tension. Professor Potain recommends a pressure of 5 cm. for that purpose. When not in use it is best to have the stopcock open. The manometer is constructed according to the principles of the metallic barometer inclosed in a case. The interior is in communication with the rubber bulb through the transmission tube. The manometer indicates the pressure to which the air in the ball is subjected.

Papillon's recent examinations in Potain's service at the Charité in Paris have shown that when the manometer showed less than 13 cm. arterial pressure, the subject was very frequently found to be in the incipient state of tuberculosis; but when there was a concomitant nephritis, it rose 2 or 3 inches above the normal, which is 16 or 17.

We now come to the physical examination proper. The patient is stripped to the waist, for neither percussion nor auscultation can be done with exactness when there are intervening layers of clothing. We inspect the conformation of his chest, ascertain whether the heart-beat is displaced, and look for possible evidences of pleuritic retractions, especially for the supraclavicular depression or glandular enlargements[32]. In



POTAIN'S SPHYGMOMANOMETER.

the early stages the inspection does not always reveal an emaciated form[33], nor the typical *habitus phthisicus*—long, thin stature, stooping, hollow and narrow chested, pale and wearing a tired look; but we may observe feeble respiratory movements, characteristic of nearly all candidates for consumption. The glistening eye, pasty skin, the bright color of the cheeks, may be observed. Palpitation may reveal an increased vocal fremitus. But there is another symptom revealed by palpitation, which is not sufficiently emphasized in our text-books. By placing the palmar surface of the two hands successively over the whole anterior region of the chest, the patient taking deep inspirations meanwhile, one can often feel the expanding portion of the lungs through the chest wall, and with a little practice differentiate the portions which are more or less involved. The motion or impulse given to the examining hand, by the inflation of the lungs during inspiration, is less in that part of the lung invaded by the tubercular process or impaired by pleuritic retraction than in the still healthy lung substance. With a little practice one can educate his hands so as to render palpitation a valuable additional means for localizing the beginning of a tubercular process.

To learn all that can be learned from percussion and auscultation one should first examine the anterior por-

tion of the chest, the patient's arms being in the ordinary position and his back resting solidly against the straight back of a chair or against the wall. Then one should examine him standing, with the arms above the head, so as to be able to carefully percuss and auscultate the lateral portion of the chest along the axillary line. In order to examine the posterior portion of the thorax, it will be advantageous to direct the patient to fold his arms across his chest, placing his hands on the opposite shoulders, and bend slightly forward.

Mediate percussion should be done with special care above and below the clavicle, and posteriorily in the supraspinous fossa and interscapular region, with a view to detecting possible dull areas in the apices. Immediate percussion, that is to say striking the clavicle directly with hammer or finger without a plessimeter, may help to reveal a beginning process of solidification in that region. Yet at a very early period of the disease the sound perceived through percussion may tell us little per se; but the experienced percussor, if he is accustomed to use his index finger as a plessimeter, may have noticed that the elasticity of the lung substance imparted to the index finger is much less marked than in healthy subjects.

Auscultation may at a very early period give us a clew to the beginning of a tuberculous process. With my distinguished teacher, Professor Grancher of Paris,[34] I consider the low inspiratory murmur, characterized by roughness when persistent and localized in one of the apices, one of the surest and earliest signs of pulmonary tuberculosis. Not infrequently the jerky or cog-wheel inspiratory sounds, rhythmic with the heart, are also perceived. According to Professor Potain of Paris, however, this wavy and jerky respiration is simply the respiratory murmur divided by the successive pulsation of the heart. In the opinion of this authority, it is by no means pathognomonic of pulmonary tuberculosis, but can only be considered as a sign of presumption. Potain has observed the cog-wheel or jerky respiration in narrow-chested women where there has not been the least sign of pulmonary affection. Râles of a smaller magnitude may be heard, especially after having requested the patient to cough a few times. The prolonged expiratory sound is heard when the tubercular process has been already in existence for some time, the prolongation of the sound being due to a contraction of the caliber of the finer bronchioles. To Da Costa we are indebted for having called attention to the fact that in a certain number of early cases of pulmonary tuberculosis a blowing sound in the subclavian or pulmonary artery may be heard, and that a murmur is sometimes present in the subclavian or pulmonary artery before any other physical sign is detected.

At times, during the early period of the disease, one may hear at the base of the lung, on the diseased side, more or less abundant mucous râles. These râles may be perceived with the inspiratory and the expiratory sound, or at the end of inspiration only. In the latter case these râles become crepitant. They are most probably due to a localized pulmonary congestion, since the patient hardly ever complains of pain or discomfort in that region. These congestive phenomena, which are not permanent, are explained by some authors[35] as being due to enlarged glands along the tracheo-bronchial tract.

I do not favor the giving of potassium iodid in order that the stethoscopic sounds should be revealed more rapidly and with more certainty. The fact that after the administration of the iodids râles of large magnitude can be perceived is evidence that a process of congestion and softening is produced, which must be considered harmful. Zeissl,[36] Vitvitsky and others have reported cases to that effect. The case of Vitvitsky is particularly instructive and conclusive in this respect: "The patient was a woman 20 years old, who suffered from a cough, with a prickling sensation in the throat, and pain on deglutition; at the apices there were suspicious stethoscopic signs. However, the patient had no fever and her general health was excellent. A laryngoscopic examination revealed an intense congestion of the larynx and ulcerations of the vocal cords. As there was cause to suspect a syphilitic origin for this affection, ammonium iodid was prescribed in amounts of thirty grains a day. After eight days of this treatment the patient's condition was manifestly aggravated; the cough had increased, the temperature had become febrile in character, râles and a bronchial soufflé were heard in the apices, Koch's bacilli were found in the sputa, which before had been free from them, and galloping phthisis set in, which terminated very soon in death.

Through Röntgen's discovery of the X-rays we have one more way to discover an early pulmonary tuberculosis. But while most highly appreciating the work done in this direction by such men as Bouchard,[37] Kelsch,[38] Espina y Capo,[39] Stubbert,[40] Williams,[41] Crane[42] and others, I must concur with Professor Loomis when he takes exception to the statement that the fluoroscope will replace the ear, or that one can diagnose with it lesions that can not be appreciated by physical examination. All that can be said of the X-rays up to this date, in relation to our subject, is that they may be considered an interesting means to corroborate a diagnosis made by ordinary physical examination. But the last word in radiography is not spoken, and research in this field of diagnosis should be highly encouraged.

Lastly, I wish to speak of the new process of agglutination as a means of discovering early pulmonary tuberculosis. The details of these experiments, which, thanks to the kindness of Dr. Biggs, I was privileged to carry out in the research laboratory of the New York City Health Department, will be published at some future date. Here I can only give a short summary. The work was done in co-operation with Dr. William H. Park, the assistant director of the laboratory, to whom I am deeply indebted, for his was far the larger share in this rather difficult task. The serum was very kindly furnished by Dr. Lambert, from his wards at Bellevue, and came from all kinds of patients.

The experiments with the pleuritic fluid drawn from a tubercular guinea-pig were a decided success. The mixture of 1 part serum to 9 of the bacilli emulsion showed the true adherent film after eighteen hours, and when agitated it broke up into thin large flakes characteristic of the positive reaction. The mixture of 1 to 20 presented the same condition, but not quite so definite. In the hanging drop—under the microscope—the 1 to 10 mixture, besides the small groups of bacilli which were originally present in the culture itself, showed numerous newly-formed loose clumps of individual bacilli. These were absolutely motionless, having lost all Brownian movements. One part of horse serum plus 9 of the watery emulsion of bacilli appeared identical with the simple watery emulsion. On lifting these tubes the sediment broke up into grains, and no true flakes appeared in the agitated fluid. According to Courmont, this is the absolutely certain sign of a negative reaction.

In the hanging drop of both these mixtures, only tiny groups of bacilli, originally present in the culture, appeared; there remained many isolated single bacilli showing active Brownian movements.

The experiments with the serum from a number of patients suffering from various diseases were much less satisfactory. Of 10 cases distinctly diagnosed as pulmonary tuberculosis, 4 reacted positively, 2 slightly, 1 gave a doubtful reaction, and 3 were absolutely negative. One case of miliary tuberculosis gave but a slight reaction. Of cases which, so far as we could tell, were free from tuberculosis, a positive reaction was obtained in a case of postpartum hemorrhage—third day. A doubtful reaction was obtained in one of chronic hemiplegia, and a similar one in an alcoholic neuritis. Absolute negative reactions resulted from the examination of serum of a patient suffering from tertiary syphilis, and from two cases of acute articular rheumatism.

From our experience thus far we can not subscribe to the claims of Arloing and Courmont,[43] that this method is of a very great diagnostic value in the early detection of pulmonary tuberculosis, but we realize that additional experiments may modify this conclusion, and trust that further researches will continue in this interesting field.

May I close this hasty review of our present means to discover the beginning of tuberculosis with an appeal especially directed to our younger men?

Consumption, though the most fatal and widespread of all chronic diseases, is most easily cured when discovered early and when timely and judiciously treated. But in this age of bacteriology and biology do not think that these branches of medicine, valuable as they are, constitute the only and always most reliable means of discovering a disease. Do not underestimate the importance of a thorough and scientific physical diagnosis. Auscultate as many healthy and diseased chests as you can; you may thus arrive as nearly as possible at a perfect understanding of normal or abnormal chest sounds. Combine the latest bacteriologic, biologic and chemical means with the most careful physical examinations. Admire and profit by, and strive to emulate, the works of a Pasteur, a Koch, a Röntgen and a Widal; but also bow your heads in grateful admiration and recognition of what has been taught to us by the masters in physical diagnosis. Do not forget such names as Auenbrugger, Lænnec, Traube, Flint, Loomis, Skoda of the past, and Da Costa, Potain, Grancher and others of the present generation.

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(For Discussion on Dr. Knopf's paper, see p. 1492.)

BIBLIOGRAPHY.

1. Knopf, S. A.: "Pulmonary Tuberculosis: Its Modern Prophylaxis and the Treatment in Special Institutions and at Home." P. Blakiston's Son & Co., Philadelphia, 1899.
2. N. Y. Med Jour., Feb. 12, 1898.
3. Straus: "La tuberculose et son bacille." Paris, 1895.
4. Goldschmidt: "Bericht uber 5 mit dem Koch'schen Heilmittel behandelte Falle von Lepra." Berliner Klin. Woch., 1891, p. 28.
5. Babes and Kalendero: "Uber die Wirkung des Koch'schen Heilmittels bei Lepra." Deutsche Med. Woch., 1891, p. 115.
6. Guidet: "Essay Historique sur les indices du debut de la Tuberculose Pulmonaire." Paris, 1898.
7. Straus and P. Teissier: "De l'emploi de la tuberculine comme agent revelateur de la syphilis." Semaine Med., 1893, p. 364.
8. Whittaker: "The Earliest Possible Recognition of Tuberculosis." Med. Record, Vol. ii, p. 826.
9. Grancher: Bull. Med., Aug. 28, 185, p. 817.
10. Cabot and Whorisky: "Subsitutes for Tuberculin in Diagnosis." Jour. of Boston Soc. of the Med. Sci., Jan. 17, 1899.
11. Hippocrates: "Epidemies." Livre iii, 3d section; Littre's translation, T. iii, p. 97.
12. Galen: Ed. Kuhn, T. xvii, p. 723.
13. Razes: "Helchauy." Ed. Sal. Favent, Venise, 1506, folio 81.
14. Daremberg: "Oeuvres choisies d'Hippocrate." 2d edition, 1855, pp. 447 and 469.
15. Behier and Hardy: "Traite elementaire de pathologie interne." Paris, 1846, Tome i, p. 273.
16. Landouzy: Congres de la Tuberculose. Paris, 1888, p. 383.
17. Dewevre: "De la predisposition des roux de la tuberculose." These de Paris, 1883.
18. Mahoudeau: Article Roux. Erythrisme in Dict. des Sciences Anthropologiques. Paris, 1884-1895.
19. "De l'habitus tuberculeux, et en particulier de la predisposition des roux de la phthisie selon Hippocrate." Presse Med. No. 57, July 19, 1899.
20. The denomination of Venetian type is probably to be traced to some paintings of famous Italian artists: A. Baschet et Feuillet de Couches "Les femmes blondes selon les paintres de l'ecole de Venice, par deux Venitiens." Paris, 1865, p. 7.
21. John Beddoe: "On the Proclivity of Phthisis Commonly Ascribed to Persons of Xanthous Complexion." Edinburgh Med. Jour., 1858-1859, Vol. iv, p. 10.
22. Med. Record, May 14, 1898.
23. Grancher: Maladies de l'appareil respiratoire. Paris, 1890, p. 199.
24. Dieulafoy: Cours de la Faculte en 1893-1894; "Hemoptysie de Defense."
25. Pidoux (1874), in his "Etudes generales et pratiques sur la phtisie," p. 276, called these hemorrhages "evacuation eliminatrice de la disposition morbide."
26. Murat: Gaz. hebd. de Med. et de Chir., March 5, 1899, p. 221. "Une signe nouveau pour le diagnostique precose." Revue de la Tuberculose, 1895.
27. Ch. Amat: "Le diagnostic precose de la tuberculose pulmonaire pour servir de base a la therapeutique prophylactique." Bull. gen. de therap., Feb. 28, 1898, p. 303.
28. Roe, J. O.: "Early Diagnosis of the Laryngoscopic Picture." N. Y. Med. Record, Vol. iv, p. 690.
29. Straus: Communication a l'Academie de Med., sur la presence des bacilles tuberculeux virulents, dans les cavites nasales d'individus sains frequentant des locaux habites par les phthisiques, July 3, 1894. La tuberculose et son bacille (1895).
30. Papillon: "Diagnostic precoce de la tuberculose pulmonaire en particulier chez les chlorotiques." These de Paris, 1897.
31. Loomis, H. P.: "The Pretuberculous Stage of Phthisis, or the Condition Which Antedates Tuberculous Development, and Some Aids to Its Diagnosis." N. Y. Med. Record, Vol. liv, p. 829.
32. In children tuberculosis is very often manifested primarily in the tracheo-bronchial glands: Osler: American Text-Book of Diseases of Children; and Rachford, "The Diagnosis of Concealed Tuberculosis." N. Y. Med. Jour., Aug. 10, 1895.
33. Meissen: "Uber die fruhe Erkennung der Lungentuberkulose." Therapeutische Monatshefte, Nov., 1898.
34. Grancher: "Maladies de l'appareil respiratoire." Paris, 1890.
35. Fernet: "Sur la diagnostic precoce de la tuberculose pulmonaire." Acad. d Med., Paris, Oct. 11, 1898, p. 253.
36. "The Dangers Following the Use of Iodized Preparations in Tuberculous Subjects." N. Y. Med. Jour., March 5, 1898.
37. Bouchard: "Application de la radioscopie au diagnostic des maladies du thorax." Revue de la Tuberculose, Vol. iv, p. 273.
38. Kelsch: "Sur le diagnostic precoce des affections tuberculeuses du thorax par la radioscopie." Acad. de Medicine, Paris, Dc. 21, 1897, p. 685.
39. Espina y Capo; Revista de medicina y. chir. Praticas, Nov. 25, 1898.
40. Stubbert, J. E.: "Comparative Diagnosis in Pulmonary Tuberculosis by the Roentgen Rays." Med. Record, May 22, 1897.
41. Williams, F. H.: "Application of X-rays in Diagnosis of Tuberculosis." Med. Record, Sept. 10, 1898.
42. Crane, A. W.: "Skiascopy of the Respiratory Organs." Phila. Monthly Med. Jour., March, 1899.
43. Arloing and Courmont: "Sur la recherche et la valeur clinique de l'agglutination du bacille de Koch par le serum de l'homme." Acadamie des Sciences, seance de Sept. 19, 1898.

THE REPAIR OF OLD LACERATIONS OF THE PELVIC FLOOR.*

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So much has been written on the subject of the perineum and pelvic floor of the female, that it would seem almost impossible to present anything new in this connection. My anatomic studies and investigations, together with my clinical experience, have convinced me that much that has been written has been based on imperfect knowledge of the anatomy and mechanics of the parts. Nor is this surprising when it is seen how lamentably defective the text-books on anatomy are in the description of this region.

The pelvic outlet of the male is often well described, while that of the female, even in some of our most recent anatomies is almost entirely neglected. As the female perineum requires the attention of the surgeon, many times as often as that of the male, this must be considered a serious omission.

The old idea of the central perineal body forming the main support of the pelvic contents has long since been abandoned by most writers, and proper attention and study have been directed to the muscular layer with its

* Read before the Chicago Gynecological Society, Nov. 17, 1799.

fasciæ, which forms the true support at the inferior strait.

It still appears difficult, however, for some to properly appreciate this supporting layer, and the value of active muscular action in its maintenance. The layer as a whole may be recognized, but the fasciæ are looked on as playing the chief rôle in the support. For instance, in one of our most recent and excellent text-books on gynecology, we find this statement[1]: "It is equally untrue that the muscles, especially the levator ani, furnish a continuous support, i. e., it is unphysiological for muscles to be in a constant state of action. Such tension would soon destroy their power. The recto-vesical fascia is in itself sufficient when intact to afford the required support." There is much contained in this statement, and as I disagree with it almost *in toto* the various points will be considered in order.

Take the point that "the recto-vesical fascia is in itself sufficient, when intact, to afford the required support." This, in my opinion, is an error. Fasciæ in themselves never furnish the kind of support here meant. There is not an instance in the human body where a fascia, aponeurosis, ligament or similar structure unaided by muscular action sustains for any great length of time any weight or tension. It is an invariable rule when weight

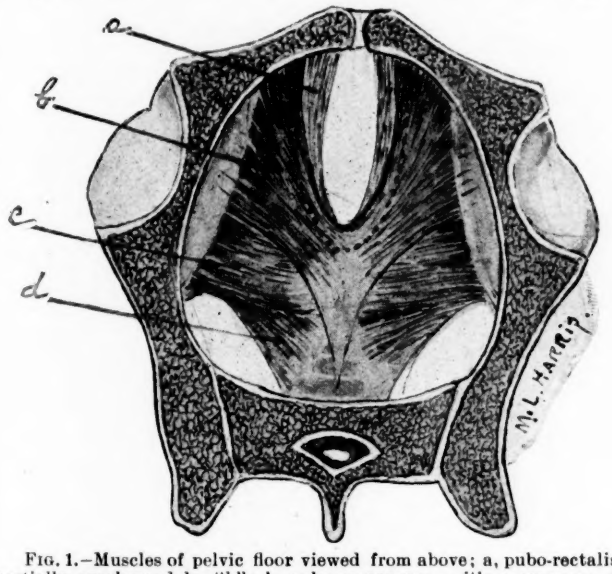

FIG. 1.—Muscles of pelvic floor viewed from above; a, pubo-rectalis partially overlapped by "b"; b, pubo-coccygeus; c, ilio-coccygeus; d ischio-coccygeus.

or tension is permanently thrown on fasciæ or ligaments, through the loss of muscular power, that these structures yield and lengthen. If the muscles of one side of the back become weakened or paralyzed, scoliosis quickly results, notwithstanding the powerful ligaments binding the vertebræ together. When paralyses of certain muscles of the leg occur, the ligaments of the arch of the foot and the plantar fascia invariably yield and the arch of the foot is lost. So it is in every instance throughout the body, and so it would inevitably be were the fasciæ mentioned left alone to furnish the support at the pelvic diaphragm.

The second point with which I disagree is that "it is unphysiological for muscles to be in a constant state of action" as "such tension would destroy their power." The direct opposite of this is true. Every normal muscle is in a constant state of activity. This does not mean that every muscle is constantly exerting its full contractile power, but that every muscle is constantly exerting a certain amount of contractile power which varies somewhat in different muscles. Cut any normal muscle, and its ends instantly retract. This is called muscular tone, but call it what you will, it can only be interpreted as the constant exertion of a certain amount of energy due to the continuous activity, in a manner, of the contractile elements composing the muscle. As already stated, the degree of activity varies in different muscles. No one will deny that the sphincter ani practically acts continuously, and that it exerts a greater degree of tension than does the sphincter oris. The length of time which increased or so-called voluntary muscular action may be sustained varies greatly in different muscles, according to habit. For instance, one may sit for hours, reading, totally unconscious of the constant action of the muscles of the body holding him erect, of the muscles of the arm holding the book, and of the eye producing accommodation. Yet some other and less powerful muscular action, to which he was unaccustomed, would produce fatigue in a very few moments.

The third point in the above statement, namely: "It is equally untrue that the muscles, especially the levator ani, furnish a continuous support," it is evident I likewise dissent from, and in answering the first two, have, at the same time, answered it. My position then is, that the so-called pelvic diaphragm or floor depends for its support absolutely on the practically continuous activity of the intact muscles which enter into its formation, and that the fasciæ are merely adjuncts to the muscles and in themselves entirely inadequate to furnish the support required.

The muscles entering into the formation of the pelvic floor, as has been already remarked, are very imperfectly described in most text-books of anatomy. They may be divided into two layers, an inner and an outer. We will concern ourselves for a few moments with the inner only. This is the layer which enters into the formation of the diaphragma pelvis proprium and is composed of four paired muscles. It is not always easy in the human subject to draw sharp lines of demarcation between some of these muscles at all points, and some knowledge of comparative anatomy is necessary to a clear understanding of them.

Comparative anatomy teaches us that these muscles are the representatives of well developed, clearly-defined muscles which, in the lower animals, are concerned in the movements of the caudal appendage, and which, owing to the loss of the caudal appendage, and the assumption of the erect posture through evolution, have somewhat readjusted their character and attachments to conform to their new function of closing the pelvic outlet and supporting the pelvic contents. These four muscles are called the ischiococcygeus; iliococcygeus; pubococcygeus and puborectalis. (Fig. 1.)

Briefly, the ischiococcygeus arises from the spine of the ischium and is inserted into the lateral border of the lower part of the sacrum and the upper part of the coccyx. The iliococcygeus arises from the iliac portion of the obturator fascia, and is inserted into the lateral border of the lower part of the coccyx and a median raphe. These two muscles will interest us but little, and will not be further considered.

The pubococcygeus arises from the lower border of the symphysis ossis pubis, from the posterior surface of the body of the os pubis, and from the obturator fascia as far back as the iliopectineal eminence. From this somewhat extensive origin the fibers pass mesodorsad, passing by the urethra, vagina and rectum, lying cephalad of the lower portion of the iliococcygeus, and

[1] Dudley, 1898, p. 438.

are inserted with those of its fellow from the opposite side by means of a tendinous expansion into the ventral surface of the coccyx and lower part of the sacrum, the more ventral fibers interlacing directly with those of its fellow as a girdle posterior to the rectum.

The puborectalis lies beneath or caudad of the ventral portion of the pubococcygeus, from which it is separated ventrally by an intermuscular fascia. It arises from the outer lower portion of the symphysis ossis pubis or the beginning of the descending ramus and the cephalic

FIG. 2.—Normal relation of pelvic floor and viscera, all cavities empty (saggital section); shows marked perineal flexure of rectum and vagina; dotted line plane of pelvic floor.

surface of the urogenital fascia. Its fibers usually form a well-defined muscular loop which passes dorsad, encircling the rectum at the perineal flexure, when it becomes continuous with its fellow. In passing by the rectum some of its fibers enter the wall of the rectum, gradually become tendinous and pass caudad as far as the cutaneous surface. A few fibers also pass anterior to the bowel,

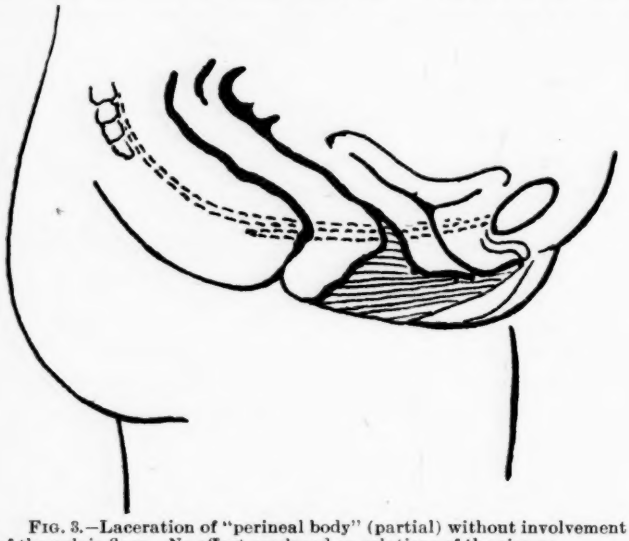

FIG. 3.—Laceration of "perineal body" (partial) without involvement of the pelvic floor. No effect produced on relations of the viscera.

between it and the vagina, some of them eventually becoming continuous with the transversus perinei muscle of the opposite side.

The pubococcygeus and the puborectalis together form what is usually termed the levator ani muscle, and are the most important muscles of the pelvic floor. They produce the characteristic perineal flexure of the rectum and vagina, and form the chief support of the pelvic viscera. They must undergo the greatest elongation during dilatation of the pelvic outlet for the passage of a child, and, therefore, are most liable to suffer rupture or laceration, as will be shown later. The more ventrally placed fibers pass almost directly ventrodorsad, while on frontal section the muscular plane slopes from the periphery toward the center and cephalocaudad. In the space between the opposite muscles ventrally pass the vagina and urethra, and it is extremely important to clearly understand the relations of these muscles to the

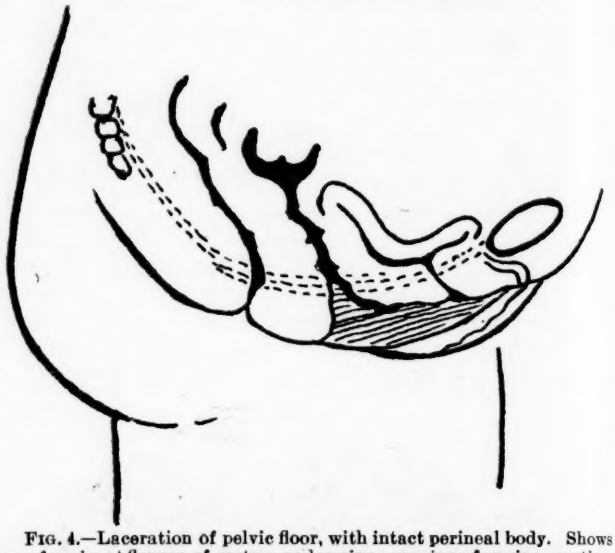

FIG. 4.—Laceration of pelvic floor, with intact perineal body. Shows loss of perineal flexure of rectum and vagina: sagging of vagina, particularly anterior wall; recession of vagina and rectum from symphysis pubis.

lateral walls of the vagina. The normal virgin vagina is not a simple straight tube. In passing from without inward the general direction of the vagina, for a distance of 1.5 to 2 cm. within the hymen, is dorsocephalad. At this point a distinct change in direction takes place and the vagina passes almost directly dorsad. The point of angulation lies opposite, and corresponds to, the perineal

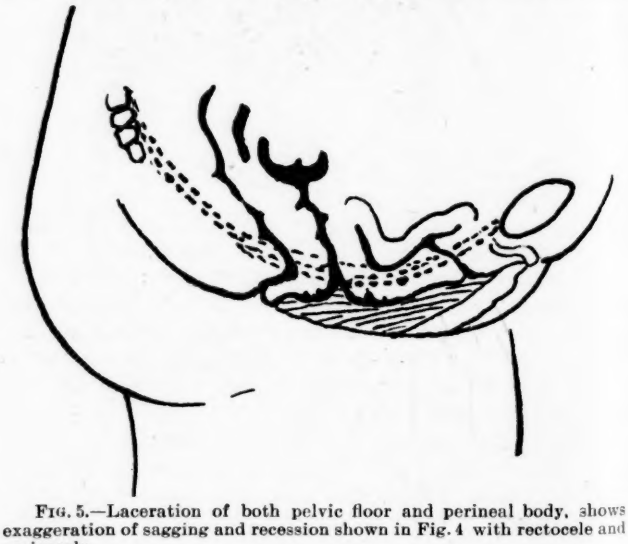

FIG. 5.—Laceration of both pelvic floor and perineal body, shows exaggeration of sagging and recession shown in Fig. 4 with rectocele and vesicocele.

flexure of the rectum and is produced by the pubococcygeus and the puborectalis muscles encircling these organs at this point and drawing them forward, or in a ventral direction. (Fig. 2.) With the finger introduced into the vagina one is able to easily recognize the point of angulation, and to distinctly feel of the edge of the puborectalis muscle through the lateral wall of the vagina as it passes in its course toward the symphysis.

An incision through the lateral wall of the vagina 1 to 2 cm. to the inner side of the hymen or its remains, will expose the median edge of this muscle. It may easily be dissected up almost from its origin from the symphysis ossis pubis to the rectum, and in passing by the vagina its fibers do not enter or form an attachment directly to the vaginal wall. The muscle varies from 3 to 6 mm. in thickness, and extends, in connection with the pubococcygeus, laterally to the wall of the pelvis, the plane in the transverse direction being oblique to the wall of the vagina.

That portion of the vagina lying internal to the point of angulation or perineal flexure, and which composes by far the major portion of the canal, lies in its ventrodorsal plane almost parallel with the muscular plane and rests on it, the rectum alone intervening.

Contraction of the muscles of this layer tends to increase the perineal flexure of the rectum and vagina by drawing the parts in a ventrocephalic direction, and the

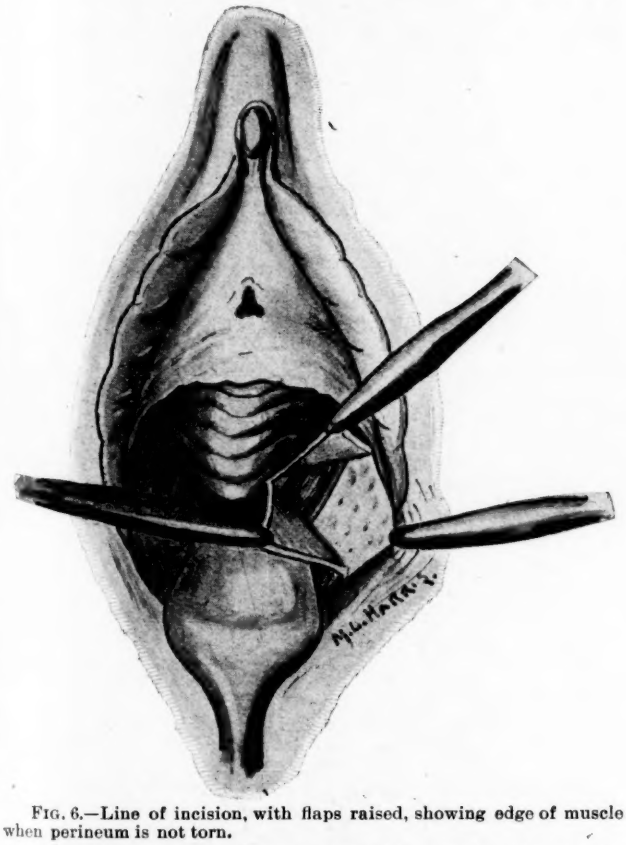

FIG. 6.—Line of incision, with flaps raised, showing edge of muscle when perineum is not torn.

opening through the muscular floor is thereby maintained ventrad of the line of gravity. The weight of the pelvic organs is thus brought to bear on the muscular layer of the pelvic floor. That mass of tissue ordinarily called the perineal body, lying between the rectum and vagina, and extending from the muscular floor of the pelvis to the cutaneous surface, has little or nothing to do with sustaining the pelvic organs.

We will now proceed to a consideration of those lesions of the pelvic outlet resulting from extreme dilatation. It is sufficient to say that they are produced by the passage of the child during labor, without attempting to explain the mechanism. We may divide these lesions or lacerations into three classes. 1. Those involving the muscles of the pelvic floor. (Fig. 4.) 2. Those involving the tissues between the lower end of the rectum and vaginal opening, external to the muscular layer. (Fig. 3.) 3. A combination of these two. (Fig. 5.)

Lacerations of the first class may be compound, by involving the mucosa and wall of the vagina, or they may be entirely submucous. Each of the varieties may vary greatly in degree. This is a practical division of all lacerations, and such elaborate classifications as are found in some text-books—as, for instance, in Byford's twenty-three distinct varieties of laceration are described—are confusing and without importance. Lacerations of the second class are usually of little importance, except from a cosmetic or perhaps hygienic point of view, and they will not be further separately considered here. Our remarks will be limited to old lacerations of the muscular plane.

Schatz[2] was one of the first to call attention to lacerations of these muscles, and the ill effects which followed the loss of muscular support. Since then many others have written about lacerations of these muscles with their fasciæ, but most of their statements have been founded on opinion unsupported by anatomic demonstration, hence are not always strictly in accord with the facts. As the caudal end of the spine in the human subject is much

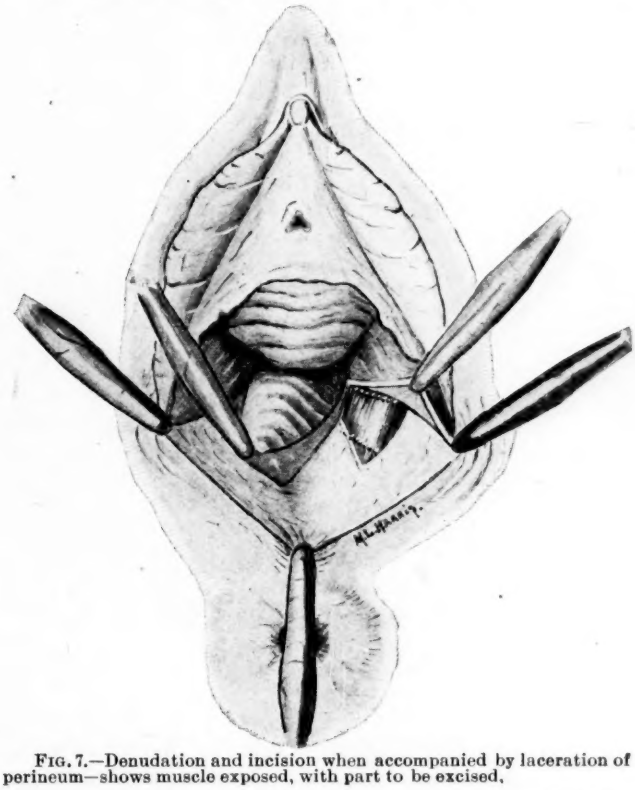

FIG. 7.—Denudation and incision when accompanied by laceration of perineum—shows muscle exposed, with part to be excised.

less movable than in the lower animals, we find the muscles which were active in moving this appendage in animals gradually becoming more fibrous or fascial in character in man as we approach the spine. As the extent of motion of the pelvic outlet or degree of laceration produced by the passage of the child at birth increases markedly as we proceed ventrally, we would expect to find lacerations more common and of greater degree in this portion of the pelvic floor; and such is true.

The puborectalis and ventral portion of the pubococcygeus are the muscles which must undergo the greatest elongation. In all cases of relaxation of the pelvic floor in which I have resected these muscles I have found lacerations of greater or less degree. Lacerations may take place in any portion of the length of the muscles, but are more common in that portion of the muscle which passes across the lateral wall of the vagina.

[2] Archives f. Gyn., 22.

It may be that the parietal bosses or the blades of the forceps are instrumental in determining, to some extent, the location of the laceration. The location of the laceration in the muscle does not necessarily correspond to the location of the tear in the vaginal wall, and the muscle may be extensively torn without the vaginal wall giving way at all. In fact, many, if not a large majority, of the muscle lacerations, are entirely subvaginal.

The lacerations may be multiple or single. Numerous slight lacerations may take place, as shown in the specimens under the microscope. (Fig. 12.) Here the separation from any individual tear is slight, but taken altogether produces considerable lengthening of the muscle. We may have a single, complete, transverse tear of the muscle, with wide separation of the ends, as shown in Figures 10 and 11.

This is a complete laceration of the left puborectalis with the ends separated at least 1 cm. The laceration may take place opposite the dorsolateral junction of the vagina, and then corresponds to what some writers term detachment of the levator ani from the rectum. It is not a detachment of the muscle from the rectum, but a laceration of the puborectalis, just as it is about to curve posterior to the bowel. Lacerations may be lateral or bilateral. The effect of lacerations of these muscles is to produce a lengthening of the muscles with a loss of their mean effective contractile power. As a result, the

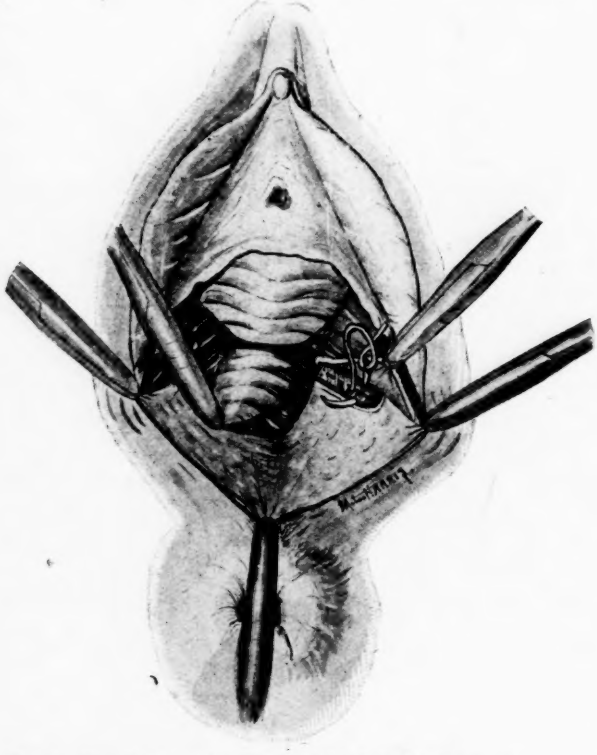

FIG. 8.—Muscle drawn together with buried catgut suture.

ventrocentral portion of the pelvic floor moves in a caudodorsal direction. The vagina loses its perineal flexure or angularity above mentioned. The major portion of the vaginal canal, instead of lying in a nearly transverse plane, slopes ventrocaudad. The posterior vaginal wall recedes from the pubic arch and the ostium vagina is enlarged and lax. The finger no longer feels the firm edge of the puborectalis as it crosses the lateral vaginal wall. The perineal furrow has lost much of its depth, and the anus, instead of being cut by a transverse line extending between the tuber ischii, lies posterior to this line. It is not the object of this paper to discuss the remote effects on the pelvic viscera of this change of position and loss of tone in the pelvic floor.

These lacerations of the muscles may be associated with laceration of the true or cutaneous perineum, or this part may be intact. The correction of the condition resulting from these lacerations of the muscles must be sought in shortening the muscles torn; in a removal of the cicatricial tissue intervening between the separated torn ends, with a restoration of the continuity of the muscles.

The Emmet operation and all denudation methods of the vaginal orifice, which are the operations in almost

FIG. 9.—Closure of vaginal wall over the sutured muscle and of the perineum.

universal use to-day, fail to restore, in any degree, the real pelvic floor. They are suitable in lacerations of the so-called perineal body, but not when the muscles are torn. The method which I wish to present involves a resection of a portion of the puborectalis muscle so as to shorten up the pelvic floor. It is performed as follows: When laceration of the perineum is present, the denudation of this part is made in the usual manner. (Fig. 7.) If this body be intact, the denudation is omitted. An incision is then carried up each lateral wall of the vagina from 3 to 5 cm., a little posterior to the center. (Fig. 6.) The vaginal wall is raised in a flap

each way from the incision. The edge of the muscle can now usually be felt, and an incision parallel therewith is made through the perivaginal connective tissue, exposing the muscle, which may easily be dissected out with the handle of a scalpel, blunt dissector or the finger, ventrally, as far as the symphysis and dorsally until it curves around posterior to the rectum. Should the muscle have been so ruptured and its ends so retracted that its edge can not be distinctly felt, the incision is made along the line which the muscle should occupy, and careful dissection made for separated ends. The

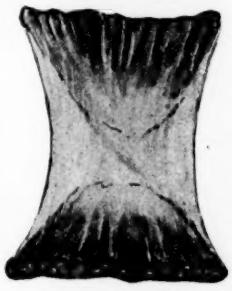

FIG. 10.—Section of pubo-rectalis removed, showing complete rupture of muscle with separation of ends—actual size.

FIG. 11.—Section of pubo-rectalis removed, showing cicatricial union after laceration—actual size.

ends of the muscle will be found connected by cicatricial tissue. I have not yet failed to find the remains of the muscle even when badly torn, and the ends widely separated.

The muscle may vary considerably in thickness, and, when very thin and ribbon-like, it may be torn by a careless dissection. When multiple small lacerations are present, the muscle will not be entirely separated at

FIG. 12.—Laceration of pubo-rectalis muscle. Leitz obj. 3; eye. a.

any point, but will be lengthened, loose and relaxed. In width or distance laterally, the muscle may be dissected from 3 to 5 cm. When it has been well freed, forceps should be placed on either side of the portion to be resected, so that the ends when cut shall not retract out of reach. The portion resected should correspond to the point of laceration if found, or when no distinct separation is found, to about the center of the muscle. The extent of the piece resected will depend on the amount of separation or the degree of lengthening and relaxation. It should be sufficient so that when the ends are drawn together the floor of the pelvis will be restored to its normal position and degree of tension. The ends of the muscle are then sutured together with an interrupted or continuous catgut stitch which, of course, remains buried. (Fig. 8.) The opposite side is treated in a similar manner, when the incisions in the lateral walls of the vagina are closed by a catgut suture. (Fig. 9.) This latter suturing should be thoroughly done so that no openings will remain through which fluids or infection may reach the deeper parts. When the perineum has been torn, this is closed in the usual way. I generally close the deep portion with a buried catgut suture, and then use silkworm gut for the cutaneous surface. The hemorrhage, in dissecting and dividing the muscle, is sometimes free but never great. It is very essential that all hemorrhage be completely controlled before closing the wounds, so that a hematoma may not develop in the deep parts and compromise the results of the operation. The subsequent care is that usual after a perineorraphy.

This operation restores the pelvic floor to its normal position. The vaginal opening is carried ventrad, the angularity or perineal flexure of the vagina returns, the posterior wall of the vagina loses its sagging and becomes more nearly horizontal again, and a good support is re-established. The clinical results have been very good. The muscles retain their active contractile power, and their elevating and sphincteric action at the vaginal opening is again restored and well maintained.

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DISCUSSION.

DR. A. GOLDSPOHN—For a number of years I have felt the inability of most of the current plastic operations on the female perineum, to accomplish any lasting good. Various authors refer to the levator ani muscle and the pelvic fascia as relevant factors; but they do not really attempt to lay these structures bare sufficiently, much less to bring their receded lateral portions together directly so their inner edges will lie in actual contact with each other without any other tissues remaining between them, and that actual union can occur approximately in the median line of the body, where alone they can act to advantage, both as a support against forces acting from above and to confine the volume and direction of the rectal cavity or of the fecal current to its normal limits. These chief objects here to be striven for will not be attained by a purely lateral and end-to-end reunion of the receded and more or less atrophic levator ani muscles unassisted by pelvic fascia, such as Dr. Harris proposes, however ideal it may otherwise appear at first sight. As a result of being torn or overdistended, these muscles have been partly thrown out of function and have become too much enfeebled in many cases to obliterate the deformities which have arisen in the pelvic floor during their inactivity, even if their remaining fibers are all reunited longitudinally. This alone will not enable them to abolish an ordinary rectocele, unless they, in common with the inner parts of the pelvic fascia, are also helped to retrieve the normal median approximation of their two lateral portions. Aside from these considerations I welcome Dr. Harris' otherwise theoretically correct proposition, for he really deals with the essential structures directly—which is not the case with the Lawson Tait, Hegar, Emmet, Aug. Martin and other methods. He works with the pelvis and beneath the vaginal wall, and in so far agrees with the principles stated by me before the Illinois State Medical Society in 1897, where I took the initiative in laying stress on laying bare the fundamental structures broadly by a temporary elevation or loosening of the posterior and lateral walls of the vagina, and on a direct approximation and union of the inner edges of these bearing structures near the median line, without the intervention or retention of any other tissues between them. To accomplish this I elevate the posterior and a part of the lateral walls of the vagina temporarily, to a distance of from 5 to 7 cm. inward from the former plane of the hymen. The receded inner edges

of the pelvic fascia and the levator ani within them are then singled out with a finger tip and caught on the opposing sides alternately with a full curved needle armed with strong catgut. In this continued suture, which thus brings the bearing structures into actual contact, a small grasp of areolar tissue is taken often enough from the wound in front of the rectum to obliterate that cavity, and from beneath the vaginal flap to bring this rather redundant vaginal wall down in ruffles upon the newly-constructed rectovaginal septum. While I do not attempt to improve on the longitudinal continuity of the levator ani as Dr. Harris does, I am very well satisfied with my method which, during eight years and in nearly all of several hundred cases, has given me lasting, good results that I cherish more than purely theoretical beauties in any new method.

DR. HENRY P. NEWMAN—I am thoroughly in accord with the statements of Dr. Harris. The separation of these muscles occurs where a deep lateral tear takes place. This space fills in with connective or scar tissue, the muscles retract, and more or less atrophy takes place. The operation that does not restore these to functional activity is consequently futile. It is simply a massing or bunching together of tissue that may for the time being close the vaginal orifice, but it is only a question of time when the rectocele, cystocele or prolapse again occurs. I would ask Dr. Harris whether he is able to outline these muscles in all instances? If so, that is certainly a point gained in dealing with this important muscular floor. Some of our prominent text-books and teachers refer to relaxed conditions of the pelvic floor. The large per cent. of these cases are dependent on subcutaneous or submucous lacerations, and should be dealt with as outlined in his paper. Lacerations in the median line are usually not so mischievous, and do not require such radical procedures, but even here the removal of the cicatricial area which unites the fibers in the median line should be dissected out and the muscular floor united in the same manner.

DR. FRANKLIN H. MARTIN—I wish to compliment Dr. Harris for bringing a paper of this description before the Society. I do not believe, however, that he is entirely right in underrating the part which the fascia layers occupy in supporting the floor of the pelvis. Without the muscles, the support would be inadequate, as it would also without the fascia. I also believe that the partition between the vulva and the anus, while not of a paramount supporting power, possesses value as a valve in preventing bacterial invasion of the genital tract.

I agree in regard to the part which the levator ani occupies in supporting not only the mouth of the vagina, but also the lower part of the rectum, and in operations such as described by the doctor—the separation of the posterior wall of the vagina from the anterior wall of the rectum in such a way that the levator ani, whether it be destroyed or weakened, can be exposed and retained—will frequently have the effect of bringing the whole floor of the pelvis forward.

The operation of Dr. Harris is unique in the fact that he is not content to expose the sides of the vagina and reach for these muscles with forceps and needles so as to bring them together en masse, but the originality lies in the fact that he searches through the pelvis everywhere, bringing individual fasciculi of muscles together and uniting them. This is a very difficult procedure.

The drawings presented are admirable, but I do not see that they add anything to the admirable work done by Howard Kelly and many other anatomists.

DR. FRANK CARY (by invitation)—I am positive that the work Dr. Harris has done can be done. The operations for repair of the perineum which I have seen have not in the majority of cases restored the previously existing condition in more than a slight degree. Where the perineal floor has been reformed by uniting the tissues with a butterfly operation, you look right into the vagina just as you did before the operation. As I do no gynecologic work whatever, I see it only in obstetric practice. When I have taken out the sutures, where operations were performed, I find that the amount of tissue involved in the suture is very slight, and the suture itself simply a small loop which could not more than pick up the mucous membrane, so it has been customary with me, for years, to take a pair of tooth forceps and reach down deep into the tear, carry through my suture, then grasp the other side, pull up the deep tissues and carry the suture through. When I take out the suture I find that I have a very large loop and the result is much better than with a small suture. I believe that by doing so I make it possible for these muscles to unite, for they certainly do retract, as stated by the Doctor, and the perineums which I have seen mended in that way were as they should be, and with the other method they were not.

I would like to say one thing more, to which some might take exception. After delivery, the perineum often seems to be without any tone whatever. In cases where I have found this lack, I believe that the muscles were torn, although there was no tear apparent. In these cases I have made it a practice to put in a deep silkworm gut suture, and it seems to me that this was beneficial.

DR. GUSTAV KOLISCHER (by invitation)—I wish to corroborate the statement that the fascia is not sufficient to support the perineal floor. We often find women who have never borne a child, whose pelvic floor is completely relaxed, because they are suffering from atrophy of the perineal muscles, the fascia, however, not being injured. We often see a deviation of the normal vaginal angle, when a rectocele or cystocele has resulted. This may indicate that Harris' idea, that the muscles are necessary to keep up the tension, is the correct one. The merit of his work lies in that he called attention to the function of the different muscles and not only what muscles might be found. As to Dr. Kelly, he did not do anything to increase our knowledge of the pelvic floor, and I can not see how Harris' merit, by calling attention to the functions of the muscle, can be mixed up with Kelly's work, which consisted of only well-known facts.

DR. C. S. BACON—These submucous lacerations are important, not only to the gynecologist, but also to the obstetrician. In recent lacerations, restoring the continuity of the muscle by buried suture is not an entirely new procedure. In regard to the frequency of submucous or subvaginal lacerations, I would like to ask the reason for the statement that they are extremely common, and if so, what, if anything, should be done in recent cases. I would suggest that in old cases the scar in the mucous membrane may be so nearly obliterated or so much displaced that it may not be very evident, but that there was originally a tear through the mucous membrane can generally be demonstrated.

DR. REUBEN PETERSON—I must confess that this paper has been a revelation to me. Together with other gynecologists, I have felt somewhat disappointed with the teachings and practical work on ruptures of the female perineum. Dr. Harris has taken hold of this subject in the proper way, by anatomic dissections, in order to ascertain what has been injured and how to restore the injured muscles to their original condition. It has been a revelation to me, because it has satisfactorily explained what I have felt in examining torn perineums, although I have never worked it out by dissections on the cadaver. Still, I would not be willing to confess that my operations for ruptured perineums have been failures. Before the operation I have felt the separation of the levator ani muscle, which he has demonstrated by his dissections, and after my operation I have felt that the continuity of the muscle had been restored, that I had restored the vagina to its proper axis and that my patients have been benefited anatomically and symptomatically.

I have used a modification of the Emmett operation, making a denudation up into the angles, removing the flap and taking deep sutures in order to reunite the muscles. Certainly it is a much more surgical proposition to lay bare torn muscles and reunite torn pigments, than to make them overlap by deep sutures. I am confident that the continuity of the levator ani muscles has been restored by the operation I employ for repairing a ruptured perineum. I would like to hear from our president as to the Emmett operation, as he has had unusual opportunities for studying it.

DR. ARTHUR D. BEVAN (by invitation)—In the drawings of this operation, which I have never seen performed, the author excises a piece of the levator ani muscle. Would it not be better, instead of excising this bit of muscle and scar tissue, to simply divide at this point and permit the two ends to overlap? Could he not make a better approximation by overlap-

ping this tissue? In a few lacerations of the perineum I have separated the levator ani muscle and have obtained the most excellent results. The only difficulty has been in getting enough tissue to overlap. No matter how much we draw them together, the ends will come apart, and I have felt that if we could overlap the muscles, we would get a better union. Dr. Harris' paper marks a distinct advance in gynecologic work, and I am particularly pleased that this advance comes through the anatomic and surgical department.

DR. EMIL RIES—The gynecologists have not entirely overlooked this subject of the muscles. Freund, in Strasburg, taught us, eight or nine years ago, when I was his obstetric assistant, to look for the levator ani muscle in perineal laceration. I did not hear the Doctor say how he makes his diagnosis of the relaxation of the muscle and the interposition of the scar tissue. The operations which are usually performed for lacerated perineum have not been confined to the mucous membrane as much as might appear from the discussion. Hegar's operation is very successfully used for the purpose of uniting the ends of the levator ani muscle. If, in this operation, we dissect out a flap of vaginal mucosa, with the rectocele behind it, and cut away this redundant vaginal tissue, the rule is to put the stitches in very deep so that they are entirely buried. I believe that gynecologists of to-day are not content with simply passing a few stitches through the mucous membrane, but they use several layers of suture. I use at least three, obviating the objection of Dr. Carey of having only a little loop, containing but a bit of tissue. That is a good observation and one which ought to show us the necessity for taking deep sutures. We make the buried sutures and superimpose three or four layers of sutures, thus bringing together the sides of the wound, no matter how deep it is, and also the tissues by the side of the rectum. We do not fail to unite the muscle in front of the rectum. We do not shorten the muscle by excising a piece, but by bringing these two sides together, and instead of having two overstretched muscles, they are brought together in this way with the effect of shortening them.

In Freund's operation, which is not much different from Emmett's or Martin's, we do not go down into the deep layers so well, and as Dr. Harris says, we do not dissect out the muscles, which is a step in advance. Dr. Goldspohn was the first to lay stress on the union of muscles. Freund describes the lacerations of the levator ani muscle, and in some of the pictures of fresh lacerations of the pelvic floor he draws special attention to these cases, but I believe he has never dissected out the muscles himself.

DR. A. GOLDSPOHN—I would differ in regard to the Hegar operation. I have traced the levator ani muscle with my finger, several hundred times at least, and find that the Hegar denudation does not extend to it. If it is to be done with a flap, the flap must be wider in the vagina than at the vulva. We would have to dissect up on the sides where Dr. Harris does his work. Neither Hegar's nor any of these methods lays bare the territory where we find the receded levator ani and the fascia.

DR. RIES—When you have the levator ani here, and you draw these two portions together, does the levator ani come with it, or does it remain outside with an empty space between?

DR. GOLDSPOHN—You bring the two portions nearer to each other, but not together.

DR. RIES—My idea was to unite these lateral parts without grasping the levator ani. You can approximate the muscle because the tissue contiguous to it must come together.

DR. GOLDSPOHN—You thereby bring them nearer to each other, but not in actual contact, as is necessary for actual union. If we want actual union of these bearing structures beneath the vagina, the entire thickness of the vaginal wall must be lifted off and the muscles and fascia, like joists beneath a floor dealt with individually and directly.

DR. T. J. WATKINS—The Society is under obligation to Dr. Harris for his valuable and scientific contribution. In his paper he neglected to mention a class of cases of injury of the pelvic floor where a portion of the levator ani muscle is divided at or very near its insertion into the radius of the pelvis. These cases can not be treated by resection of the torn muscle; they can only be treated satisfactorily by suturing the severed portion of the muscle to the fascia of the anterior vaginal wall in the sulcus of the vagina. In resection of the torn muscle, it would seem, in many cases, that the muscle would not have sufficient consistency to allow the ends to be held together by sutures. Emmett, a long time ago, called attention to the injury of levator ani in relaxation of the posterior vaginal wall. He devised this operation because he learned that the principal injury in cases of relaxation was invariably in the lateral wall of the vagina. The Emmett operation must restore the injured muscle because it will properly relieve symptomatically at least, any case of relaxation of the pelvic outlet if it is properly done.

DR. M. L. HARRIS—Dr. Goldspohn thinks we may not always be able to find the muscles. That possibly may be true, rarely, though thus far I have met with no such case, but have been able to find them without much difficulty by going deep enough into the pelvis through the lateral wall of the vagina. Dr. Martin does not think the fasciæ could furnish the support without the muscles, nor could the muscles without the fasciæ. As the latter are but the sheaths, and purely inactive parts of the muscles and as we never have a muscle without a sheath, Nature would have been very remiss had she attempted the anomaly of placing muscles here without sheaths or fasciæ.

The drawings were not introduced as works of art, in competition with Dr. Kelly's, but to illustrate points which are nowhere, to my knowledge, touched on by Dr. Kelly. My reason for stating that I thought the majority of muscle lacerations were subvaginal was the fact that I had found the lacerations most frequent opposite the lateral wall of the vagina. The vagina usually tears along the sulcus, but we may have lacerations of the muscles without the vagina being torn at all.

In reply to Dr. Bevan's query as to the advisability of overlapping the muscle, Hayem's experiments on dividing and reuniting muscles in the dog show that the function of the muscle is best restored when there is an intimate end-to-end union.

Dr. Ries called attention to the Hegar operation as uniting the levator ani muscle. With all due respect to Dr. Ries, I must beg to differ from him. The Hegar and Freund attempt to bring the levator ani in front of the rectum is an erroneous one. The levator ani does not pass between the rectum and vagina, and any attempt to bring it there is wrong, as it does not draw the real support of the pelvic floor forward where it should be. The real support lies behind the rectum.

In regard to a separation of the muscle from the symphysis, mentioned by Dr. Watkins, such a separation has been described. Were I to meet with such a case I would try to advance the end of the muscle attaching it to the urogenital fascia, if necessary, or shorten it up by resection, if the anterior end had taken a new firm attachment.

As to the method of diagnosing lacerations of the puborectalis, I would refer to the points brought out in the paper, such as loss of the perineal flexure of the vagina, recession of vagina and anus from the pubic arch, diminution of the depth of the perineal furrow, relaxed muscle as felt by the finger, diminished contractile power, etc.

EXTIRPATION OF THE UTERUS, ITS APPENDAGES, TUMORS, ETC., WITHOUT LIGATURES OR RETENTION CLAMPS.

DEMONSTRATIONS OF NEW INSTRUMENT FOR HEMOSTASIS WITH REPORT OF CLINICAL CASES.*

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CHICAGO.

The prime object of the angiotribe here represented is to produce absolute hemostasis and do away with ligatures or foreign bodies in the operative field. The medical profession has been struggling with this problem for a long time. It is apparent to all that the ligature is not ideal or even desirable, constituting as it does a

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

foreign body always in the nature of a complication in surgical wounds. The écraseur was one of the early manifestations of an epoch to do away with the time-honored ligature. In a modified form it seems to possess some merit. The clamp and cautery has held its place in rectal surgery for a considerable period and, in spite of some advantages claimed for the ligature in hemorrhoidal operations it is probable that the cautery is still used as often as the ligature method. Notwithstanding that it is now giving way to better devices, the retention clamp, likewise, has been a life-saving substitute for the ligature, and has been a means of revolutionizing pelvic surgery. The many devices for perfecting the absorbable suture and ligature, both in material used and manner of preparing, only go to show that the profession is fully alive to the importance of doing away with the conventional ligature and suture. The Keith-Skene electric heat and the Doyen

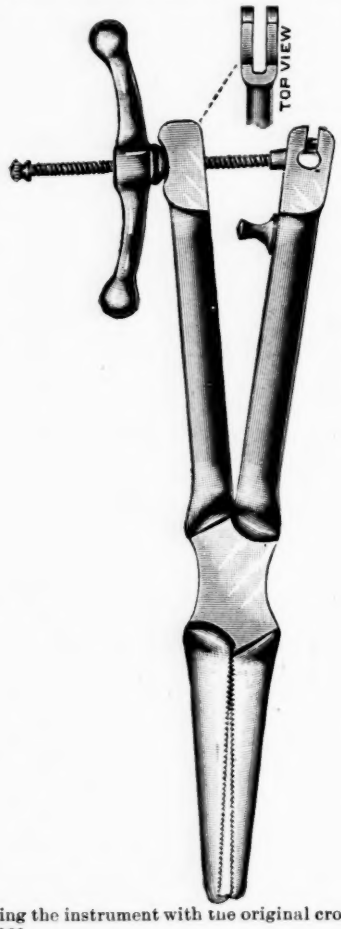

Fig. 1.—Showing the instrument with the original cross bar and screw attachment in place.

crusher are among the later methods that bid fair to solve the long sought problem.

It must not be understood that the leaving of foreign bodies in the wound is the only objection to the ligature, while it must be conceded that it is an all-important argument against its use. Other vital objections still remain: 1. Uncertainty as to slipping. 2. Uncertainty as to asepsis. 3. Shrinkage in the stump, thereby loosening the constricted vessels. 4. Bunching together tissue, and thereby dragging upon and displacing neighboring structures. 5. Leaving foreign bodies in the wound.

The author recognizes that in the individual ligation of vessels some of the above objections would not apply; but this very desirable method of using the ligature is not always possible or at times advisable. Again, the overtowering advantages of its substitutes—here particular reference is made to the Keith-Skene and Doyen methods—apparently leave little room for argument: 1. Immediate and absolute hemostasis. 2. Perfect asepsis. 3. An undisturbed stump, for example, no bunching of pedicle or dragging upon neighboring structures. 4. The operative field free from foreign bodies, and 5, with the improved instruments recently constructed by the author, promptness of execution and adaptability to nearly all tissues and surgical work.

The general outlines of the instrument can be seen by the accompanying cuts, (Figs. 1, 2, 3.) The length of each blade is 34 cm., of which 18 are for the handles, 6 for the lock, and 10 for the blades or jaws of the instrument. The jaws taper slightly from 1.25 cm. in width and thickness to 1 cm. in width and .5 cm. in thickness. The bite of the jaws is serrated with a deep

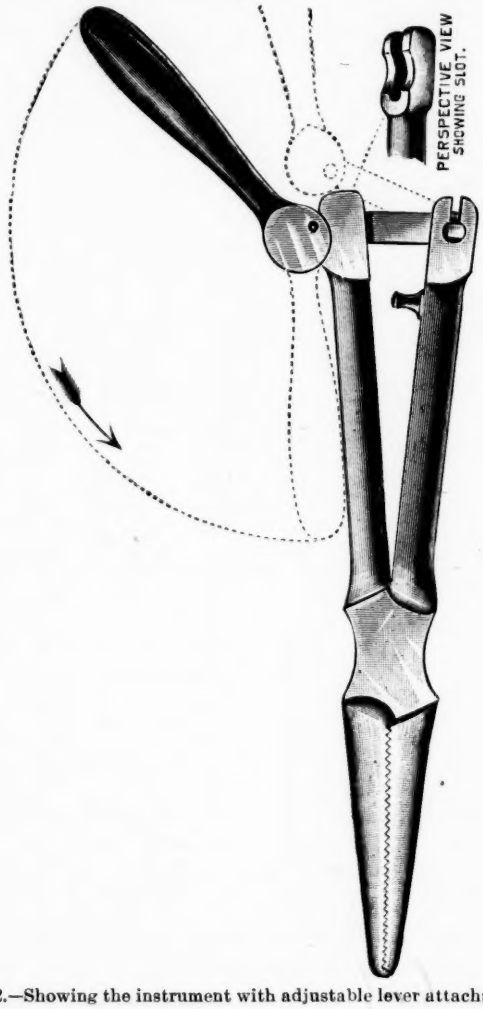

Fig. 2.—Showing the instrument with adjustable lever attachment.

groove running through its center, .25 cm. in width; the lock is 6 cm. in length, 4 in breadth, and 1.75 in thickness, the handles are 1.6 cm. in width and the same in thickness; at their ends are slots for receiving the cross-bar and screw, or the lever appliance. A small pin placed between the handles near the end serves to prevent too great pressure on the handles and the consequent danger of breaking.

The author's modification differs from the Thumin instrument in having longer blades, enabling one to include the entire broad ligament or large pedicle at a single application. The blades are narrower, so that less space is required in their adaptation to the part, and they can grasp shorter pedicles, or even sessile growths with greater facility. At the end of one of the blades is a slightly projecting bite preventing the grasped tissue

from extending beyond the blades, as it is apt to do in closing the Thumin instrument.

The lock is separable (Fig. 3) not only rendering it a more aseptic instrument, but allowing the individual introduction of its blades when desired. A new or modified Thumin lever has been added to the instrument as a special attachment. A combination mortise lock allows of an interchange at will of the lever in applying the compressive force to that of the cross-bar and screw.

While the cross-bar and screw will be found most desirable for general use, the lever has great power of compression and can be applied with a single motion or movement of the hand. This new or modified lever (Fig. 2) not only has the interchangeable lock in com-

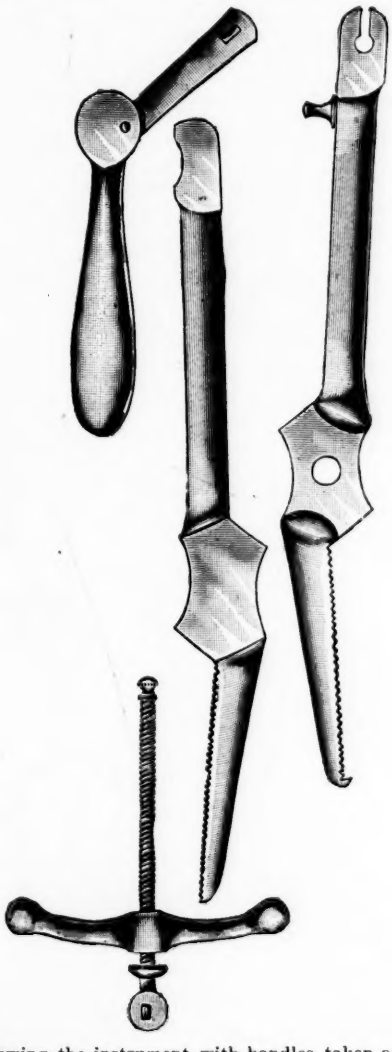

Fig. 3.—Showing the instrument with handles taken apart and its attachments separated.

mon with that of the cross-bar and screw referred to above, but is simple in construction and adaption, and allows of a much wider separation of the blades during their application. The Thumin lever requires a partial closure of the blades and, necessarily their previous application to the pedicle or tissue to be clamped before adjusting the lock. This obstacle is overcome by the modification, as will be seen by the accompanying cuts. (Figs. 1 and 2.) The instrument, unlike the Bissell or modified Tuffier instrument used at the Woman's Hospital, New York, only requires an application of a minute or two, while the former requires three to five minutes. The instrument is applied to the broad ligaments or any soft tissue to be excised in the same manner as the ordinary broad ligament clamp, using the screw and cross-bar or the lever as the compressive force. Immediately on its application the broad ligament is cut away on the uterine side and close to the clamp, and at the end of a minute it is removed by releasing the screw or lever. It is then applied on the opposite side in precisely the same manner. The uterus is now cut away, the toilet of the peritoneum accomplished and the operation completed. With two instruments at hand, both broad ligaments may be clamped and the uterus at once removed. In amputation of the uterus at its neck, the abdominal operation is accomplished in the usual manner, using the clamp in place of the ligature for the broad ligaments on either side. The flaps are made from behind and in front of the uterus in the usual manner, and subsequently united over the stump with a running catgut suture. I propose substituting a clamp for this part of the operation as well, preferring the thin ribbon-like stump in cementing the flaps together to the union by running ligature. A flat right-angled clamp, as has been suggested by Thumin, for the vaginal arteries, will, I believe, accomplish this. In ovariotomy or salpingo-oöphorectomy the operation is very simple, clamping and removing; where there is no pus I use no drainage; where there is a septic condition, I have employed either the cautery on the raw amputated edge of the stump—which is insignificant—or strong carbolic acid. The translucent edge of the compressed tissue is at first quite blanched, but in time—as seen upon dogs—the hyperemic edge at the attached portion gradually extends its reddened area more and more, so that the entire stump is ultimately resuscitated, and little or no sloughing occurs, as obtains in a large, compressed and bunched tissue when the conventional ligature is used.

There being no granulating surfaces left, the adhesions so much to be dreaded by the ordinary method do not occur. There being no ligatures left behind, one is relieved of the apprehension of any complications from this source.

CASE 1.—Mrs. D., aged 62, German, housewife; history of previous illness negative; family history good, except that mother died of tuberculosis. She menstruated first at 15; regular until the age of 53, when menses ceased abruptly; no history of irregularity, excessive flow or pain; married at the age of 20; husband living; nine children, whose ages range from 40 to 20. Seven years ago she began to have pain in the back, at intervals; no other symptoms until one year ago, in January, when she began to have discharge and hemorrhage; hemorrhage irregular, at times a show of blood, then absent, then a flow for a considerable time—two, three, four or five weeks. During the past year the patient has become anemic, and has lost not a little flesh and strength. Examination revealed a tumor—enlarged uterus—in the pelvis, extending two and a half inches above the pubic bone, hard and nodular.

Diagnosis—Carcinoma of the uterus, and probable long-standing multiple fibroids.

Operation, Jan. 20, 1899: hysterectomy; the vaginal route was chosen, although the vagina was somewhat small and the uterus thrice its normal size. The outlet was enlarged by bilateral incisions. Incisions were made anterior and posterior to the cervix, into the peritoneal cavity, and the left uterine artery severed and tied. An effort was made to pull the uterus down, but this was found impossible on account of the size, friability and adhesions. The abdomen was opened and the uterus freed; the clamp or crusher placed on the broad ligament from above downward, compressed, and left for two and a half minutes.

The ligament was cut on the uterine side of the clamp; clamp loosened; no oozing; clamp placed on the opposite ligament, and this similarly dealt with. The uterus, now free, was lifted out and the abdomen closed; gauze drainage through the vagina; recovery complete; no after hemorrhage; only slight serosanguineous oozing from the vagina; patient up in four weeks, and left the hospital in six weeks.

CASE 2.—Mrs. E., age 20 years; American; family history

good; menstruated first at the age of 13; never regular; backache and pain over the right ovarian region, which is increased at the menstrual period; married one and a half years; menses have been more painful and backache and pain in the right ovarian region more severe since marriage.

Examination showed the uterus to be infantile, cervix small, elongated and eroded; ovaries large and prolapsed, and this enlargement and prolapse more marked in the right side.

Operation, Jan. 21, 1899: currettement; tracheloplasty; celiotomy; right ovary found low in the cul-de-sac, twice the normal size, with cystic degeneration, tube closed, enlarged and thickened; adhesions broken up and ovary and tube removed by means of the crusher or clamp. Left ovary slightly enlarged and cystic; tube closed, and many small cysts around the extremity. A section of cystic ovary was removed, the tube opened, and ampulla everted and held by fine catgut; cysts tied off with catgut; recovery good; no evidences of hemorrhage from ovarian stump. The patient was getting up in two weeks and left the hospital at the end of the third week.

CASE 3.—Mrs. F., aged 24, English. Previous history: patient well, except a monthly hemorrhage from the nose, each time lasting about twenty-four hours. This phenomenon first appeared when the patient was 6 years of age, and lasted until she was 12; mother died at childbirth. Her menses first appeared in the thirteenth year of the patient's life, and continued regularly and without pain until the first pregnancy; since birth of first child they have been painful; married at the age of 15 years; one child, 8 years old; twins, born six and a half years ago, lived six weeks; husband died in 1894; patient had a laceration of the cervix and probable infection with the first child. She has not been well since. Her symptoms increased after giving birth to twins; had double salpingo-oöphorectomy and trachelorrhaphy four years ago; since then pains in the abdomen have increased rather than diminished; bowels have been constipated and bladder irritable.

Examination showed the uterus to be large and tender, and especially tender at the horns of the uterus in the old stumps, consequently a diagnosis of metritis and interstitial salpingitis of the remaining portions of the tube was made.

Operation, Jan. 26, 1899: vaginal hysterectomy. The usual incision was made around the cervix, and the uterus freed anteriorly and posteriorly. The fundus was then turned forward and pulled downward through the anterior incision. The clamp or crusher was placed on the broad ligament from above downward and left the usual length of time; then the opposite ligament was treated in the same manner, which completed the operation; recovery; relief of pain has been very marked. No hemorrhage followed operation. Suppuration was found in both horns of the uterus. The patient was sitting up in ten days, and left the hospital at the end of three weeks.

CASE 4.—Mrs. S., aged 29, German-American. History: Cloakfitter for eight years; on her feet many hours each day; large and well developed; family history good; first menstruated at the age of 14 years, and was regular until about two years ago. She suffered considerably during the first three years of menstrual life, then the symptoms became less severe until about seven years ago, since which time they have been growing worse. She has always had severe pain over the lower half of the abdomen during the menstrual period, but during the last year this pain has been constant. She also complained of severe pain in the chest over the cardiac region, without apparent local cause.

Examination revealed stenosis of the os uteri, a large uterus, movable mass to the right and above the uterus. The mass on the right side of the uterus had undoubtedly been taken from a floating kidney, as that diagnosis had been made by Chicago physicians.

Operation: currettement; tracheloplasty; celiotomy; left ovary found to be the size of a large hen's egg, cystic, and the capsule much thickened, as seen in a specimen; tube and ovarian ligament were much thickened and elongated, allowing of considerable movement; ovary removed by means of crusher, leaving tube. The right ovary was found to be the size of a hen's egg, cystic and degenerated, but to a less degree than the left; cyst of broad ligament the size of a turkey's egg, situated above the ovary in such a way that the two gave the characteristic kidney shape; cyst removed and also section of this ovary; recovery complete; no evidence of hemorrhage. The patient was sitting up in three weeks, and left the hospital at the end of four weeks.

CASE 5.—Mrs. H., aged 30, American. Previous history: Well until a year ago last Thanksgiving; family history good; menstruated first at the age of 15; menses regular and painless until one year ago last November; married at the age of 21, only child 8 years of age; well after birth of child. Friday morning, after Thanksgiving of 1897, she began to have headache and pains in the back. Friday night she began to vomit. Saturday morning she had pain in the right inguinal region. The pain and vomiting ceased in a few days, but she did not leave her bed until the following March; pain and vomiting with each menstrual period since November, 1897.

Examination revealed laceration of perineum, laceration of cervix, large prolapsed ovary on the left side; prolapsed ovary on the right side; hard body the size of a hickorynut in the region of the appendix.

Operation, Jan. 26, 1899; currettement; tracheloplasty; perineorrhaphy; celiotomy, appendectomy—the appendix having been doubled on itself and adherent in such a way as to form the hard body in this region; section of right ovary removed, and on the left side salpingo-oöphorectomy done with the crusher or clamp; no evidence of hemorrhage; patient made a complete recovery; was sitting up on the eighteenth, and left the hospital on the twenty-seventh day after operation.

CASE 6.—Mrs. J., aged 53; Norwegian; housewife; previous history negative; family history good; menstruated first at the age of 14 years, always regular until the last year of menstrual life; ceased to menstruate at the age of 48, five years ago; married at 21; has had seven children. The abdomen began to enlarge one year ago; patient had a feeling of pressure in the left ovarian region; bowels constipated. Four or five months ago she began to notice a tumor on the left side. Examination revealed a cystic tumor of the size of the uterus at seven months of pregnancy.

Operation, Feb. 13, 1899: removal of the tumor by means of the clamp or crusher for the pedicle; abdomen closed without drainage; recovery uninterrupted; no evidence of hemorrhage; sitting up on the eighteenth, and left the hospital on the twenty-seventh day after operation.

CASE 7.—Miss T., aged 47, Swedish; dressmaker; family history good; previous personal history negative; menstruated first at the age of 15; has been regular until last year, when it became excessive and more frequent; patient is anemic and has lost flesh; has noticed enlargement of the lower abdomen, of irregular shape, approaching near the umbilicus.

Examination showed the depth of the uterine canal to be six inches; irregular nodular tumor extending laterally into both broad ligaments and up into the umbilicus; movable, and to all appearance no adhesions or involvement of the adnexa; patient has heart murmur—regurgitant, mitral.

Operation, March 13, 1899: hysterectomy; median abdominal incision from one inch above pubis to umbilicus; tumor lifted out of pelvis; clamp applied to the entire length of left broad ligament. The uterus was now cut away from this side, and on removal of the clamp, was in two minutes applied to the opposite side; uterus cut away with the usual anterior and posterior peritoneal flaps. At one point there was slight bleeding, owing to imperfect closure of the instrument. A catgut ligature was applied, with no further trouble. The peritoneal wound was then rapidly whipped together by continuous catgut sutures, leaving no exposures of the raw surface, or the slightest oozing of blood. The abdomen was closed without drainage. The patient's condition had been precarious from the beginning of the anesthesia, owing to the defective heart. Notwithstanding the use of restoratives, saline, strychnia, etc., she did not rally, and died on the second morning, from shock and the effects of the heart lesion.

CASE 8.—Mrs. S., aged 48, American; housewife; menstruation began at 14 years of age; regular until the birth of her last child, fourteen years ago; since then very irregular, varying from two to six weeks; four children, youngest 18 years old; last labor severe and instrumental, patient suffering considerable trauma.

Examination revealed lacerated perineum, lacerated cervix, endometritis, retroflexion with extensive adhesions.

Operation, March 23, 1899, by Dr. C. W. Barrett, house physician Marion Sims Sanitarium; currettement, tracheloplasty, perineorrhaphy, removal of hemorrhoids, celiotomy breaking up of adhesions and double salpingo-oöphorectomy; abdominal fixation of uterus; abdominal wound closed without drainage; no symptoms of hemorrhage; complete and prompt recovery; was sitting up the twenty-fourth and left the hospital on the twenty-eighth day after the operation.

CASE 9.—Mrs. W., 36 years old, German; housewife; family history good; has had three children, the youngest 8 years old; irregular menstruation, menorrhagia or metror-

rhagia, with laterally a bad-smelling leucorrheal discharge; backache and constant pain over the left inguinal—ovarian—region. Diagnosis: carcinoma of the uterus.

Operation, April 5, 1899: vaginal hysterectomy, by Drs. V. Pleth and C. W. Barrett; angiotribe applied for two and a half minutes, on the right broad ligament, after the usual circular incision and separation of bladder and rectum; re-applied on the opposite broad ligament; uterus cut away, including right ovary and tube; left ovary left *in situ* to prevent storm of the menopause; gauze packing in vaginal vault. The patient made an uninterrupted recovery, the highest temperature after the operation being 100; highest pulse, 90; absolutely no pain or bleeding following the operation. She was sitting up in two weeks, and about in the third week.

CASE 10.—Mrs. H., aged 40; American; first menstruated at the age of 15; always regular but scanty; married fifteen years; never pregnant; had severe attack of leucorrhea twelve years ago—suspected gonorrhea; was somewhat relieved by treatment, but always had a feeling of weakness, and inability to be on her feet for any length of time.

Examination revealed cystic degeneration of the cervix; endometritis, subinvolution, retrodisplacement, with extensive adhesions, pyosalpinx.

Operation, April 6, 1899, at my private hospital; curettement, tracheloplasty, celiotomy, extensive adhesions torn up, double salpingo-oöphorectomy, drainage through vagina; no evidence of hemorrhage; almost immediate relief of symptoms; was up on the twenty-third and left the hospital on the twenty-seventh day after the operation.

CASE 11.—Miss M., aged 43, German; menses first appeared at 14; always regular. Three years ago she gave birth to a seven months' child; septic labor; since birth of child, pain at menstrual period, severe for one week before the flow, continuing and becoming worse until it is now constant.

Examination revealed laceration of the perineum, laceration of the cervix, endometritis, retrodisplacement, and inflammatory thickening of both broad ligaments, with extensive adhesions.

Operation, April 13, 1899: curettement, tracheloplasty, perineorrhaphy, celiotomy, adhesions broken up, right salpingo-oöphorectomy with clamp; cyst removed from left ovary; suspensio-uteri operation; closure of the abdomen with silkworm gut suture, without drainage; no evidence of hemorrhage; entirely smooth recovery; got up on the twenty-second and left the hospital on the twenty-sixth day after operation.

CASE 12.—Miss F., age 28, American; teacher; family history negative; first menstruated at the age of 15; pain first two days. One and a half years ago she had a fall, and has not been well since.

Operation, April 15, 1899: left salpingo-oöphorectomy by means of the clamp; cyst removed from right ovary; suspensio-uteri operation; abdomen closed without drainage; no hemorrhage; perfectly smooth recovery; sitting up on the eighteenth day; left hospital at end of third week.

CASE 13.—Mrs. R., aged 33, German; housewife; married sixteen years; five children; two miscarriages at four and a half and eight months; first menstruated at 12 years of age; last pregnancy three and a half years ago; difficult labor; not well since; backache, dragging feeling, pain over ovaries and intestinal disturbance, vomiting, constipation. Examination disclosed laceration of the perineum and cervix with large protruding hemorrhoids.

Operation, April 24, 1899, at my private hospital: curettement, tracheloplasty, perineorrhaphy and removal of hemorrhoids by means of the angiotribe and cauterization; prompt recovery; no bleeding, and but a minimum irritation from hemorrhoidal operation; up on the sixteenth day; patient is about to leave the hospital.

CASE 14.—Mrs. K., aged 37, American; housewife; widow; first menstruated at 13; always regular; no pains; two children, 16 and 17; one miscarriage; began to have irregular menses four or five years ago, and latterly has become very profuse; menorrhagia and metrorrhagia. Examination shows large irregular tumor extending to the left and as high as the umbilicus; patient anemic.

Operation, May 7, 1899, at my private hospital: abdominal hysterectomy, with clamp; patient has to date made uninterrupted recovery; no bleeding; no rise of temperature, nor increased heart action.

CASE 15.—Mrs. N., aged 43; German; housewife; family history good; two children; normal delivery; inflammation of the bowels eight years ago; first menstruated at 15 years of age; regular; always with some pain; last ten or twelve months has had increased pain in pelvis, and more flow, with greater frequency. A mass can readily be palpated over the right iliac and lumbar region, connected with the uterus, nodular in outline. Diagnosis: Multiple fibroids of the uterus.

Operation, April 25, 1899, in the amphitheater of the Chicago Policlinic: combined vaginal and abdominal hysterectomy with the angiotribe. The Thurin instrument was used here—my own being out of order—and in its double application on each broad ligament the uterine artery was not engaged on one side, necessitating the use of a retention clamp; patient sitting up on the sixteenth day, and will soon leave the hospital; no bleeding or adverse symptoms whatever.

CASE 16.—Mrs. H., aged 54, American; housewife; father died of pulmonary tuberculosis; mother in good health, aged 75; brother 57, good health; all the diseases of childhood; a severe attack of typhoid fever at 12; never strong; two attacks of inflammation of the bowels, twenty and twenty-five years ago; first menstruated at 17; irregular; every two to four weeks; painful; excessive flow, lasting five to six days; leucorrhea, from early menstrual life; married at 21; six children; normal deliveries; one child is tubercular. Present condition: Menopause two years ago; leucorrheal discharge has become worse; with bad odor of late; pains in the inguinal regions and back, increasing in severity and more continuous; anemic. Diagnosis: Uterine carcinoma.

Operation, May 5, 1899, amphitheater of the Chicago Policlinic: combined vaginal hysterectomy by means of the angiotribe; nothing unusual in the application except the vessels of the broad ligament were large and a pulsating uterine artery led me to apply a retention clamp on one side, and radical operation for hemorrhoids (clamp and cautery). As my own clamp had been used and soiled, I did the operation on the hemorrhoids by means of the Kelley clamp. Three hours after the operation I was called to the Hospital, as the patient had severe flooding. On examination I found that the bleeding was from the hemorrhoidal vessels. Clamps were applied, and no further bleeding took place. Since then she has had an uninterrupted recovery. The gauze has been removed from the vagina, and there is no evidence whatever of bleeding from the broad ligaments, or hysterectomy wound, and she is feeling well.

LA GRIPPE.*

BY J. E. GILCREEST, M.D.

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Influenza, la grippe or epidemic catarrhal fever may be defined as a specific epidemic and contagious disease, caused by a specific bacillus. This disease spreads rapidly over wide districts of country, causing marked febrile symptoms, is often attended by serious complications and causes great and prolonged prostration of strength.

Various epidemics of influenza are on record, Parks tracing it back to the ninth century. The first epidemic in England was reported in 1510, and in the United States in 1647 and at various periods down to the present times. The epidemic described in 1847, in England, was very much like we now find it in America. It has been more prevalent since 1890 than during any previous decade, having spread nearly all over the country in 1890, in April and May, 1891, and in the winter of 1891-92. Only a few cases were reported during the winters of 1892 and 1893. In the early part of 1895 it prevailed epidemically, and again in 1897 and the fall of 1898; and up to this time, April 20, 1899, it is very prevalent in many portions of the country.

Etiology.—At the present time it is generally agreed by medical teachers and writers, that la grippe is a contagious, infectious disease caused by the specific bacillus discovered in the pus-cells of the tracheal mucus, by Pfeiffer, in 1892, and in the blood by Canon, the same year. The toxins developed by these micro-organ-

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

isms are responsible for many of the important sequelæ that accompany or follow a large number of attacks.

The Pfeiffer bacillus is very small, non-motile, and stains well with methylene blue or Ziehl's carbol-fuchsin. When stained, it may be observed as a small dumb-bell, having knobbed ends connected by a rod-like shaft. This bacillus can be cultivated in agar and other media, but not in gelatin, and, when inoculated into rabbits and other animals, it causes more or less typical influenza.

Dr. Dawson Williams of London says the history of the epidemic of 1889-90 strangely supports the view that influenza is propagated mainly, if not entirely, by human intercourse. He gives many illustrations in proof of this statement. He says persons living in the suburbs, going daily to business in the towns, had generally been the first to suffer, other members of the household who remained out of town being attacked later.

J. Dreschfeld emphasizes the fact that inmates of insane asylums are less liable to be affected with la grippe than the inmates of other large institutions, such as barracks, etc. Kern gives statistics of the district prison at Freiburg, with 406 prisoners, 35 per cent. of whom were stricken; of those in solitary confinement, 30 per cent.; of those in common wards, 50 per cent.; of those in communication with the outside world, 70 per cent. The restriction of the outbreak to different corridors shows, in his opinion, that it was not due to a miasmatic influence.

While we believe the Pfeiffer bacillus is the cause of this disease, the modes of conveyance have not yet been satisfactorily established. When we take for granted that it is an air-borne disease, it does not account for the rapid and simultaneous spread over a large country, sometimes traveling where the wind is continually blowing in an opposite direction. Pepper suggested that the micro-organism may be almost universally distributed, but only capable of causing occcasional and sporadic cases under ordinary circumstances, and that under certain extraordinary atmospheric or telluric conditions it acquires a degree of virulence that renders all subject to its attack. The fact that an epidemic spreads along commercial routes, its rapid dissemination, and the absence of any constant antecedent meteorologic condition, militates against the view that it is a miasmatic or air-borne disease.

Pathology—The morbid changes found after death are of a varied character, and are, in the main, caused by the complication by which death was brought about. Those due to la grippe itself are of a character common to all forms of acute infective diseases, namely, parenchymatous degeneration of the liver and of the muscular substance of the heart and minute blood-vessels. The last named may lead to capillary hemorrhages into the viscera or nervous centers.

In some cases inflammation has extended into the frontal sinuses, the maxillary antrum and the middle ear, and, in more cases, there are evidences of pneumonia. But all these are regarded rather as complications than as essential features of the general disease. Numerous bacteriologic examinations have shown that in pneumonia, complicating la grippe, the diplococcus of pneumonia is present in some cases, the streptococcus pyogenes in others.

These two microbes have also been found in the bronchial sputum, while in the secretions of the nasal cavities the staphylococcus aureus and albus and the capsule bacillus of Friedlander, as well as two species of bacilli capable of producing pneumonia in rodents have been detected. These micro-organisms enumerated are due to complications and not to la grippe.

The febrile symptoms apppear to result from the direct action of the bacillus, or its ptomains, on the corpuscular elements of the blood and of the cerebral nerve-centers, creating great pain and soreness, with marked depression and impairment of vital resistance.

This view is sustained by A. Cantani, Jr., who injected cultures of the influenza bacillus into the brain of rabbits, by which severe nervous symptoms were produced, and from which he inferred the bacillus to be an intracellular poison acting primarily on the central system. The effects of intercranial inoculations of influenza bacillus in rabbits were also studied by Cantani. Virulent cultures were introduced into the brain of rabbits by trephining. Severe nervous symptoms, high temperature, and death followed in about twenty-four hours. At the autopsy, about the site of the wound was edema containing numerous Pfeiffer bacilli and hemorrhagic exudation. The brain was markedly hyperemic, the ventricles often containing a purulent exudation in which numerous la grippe bacilli were found; the substance of the brain, on section, showed many small hemorrhages and numerous bacilli, with polynuclear leucocytes. The bacilli appeared to spread, especially by the lymph-channels. The spinal cord was also invaded to a slight extent, the bacilli passing by way of the central canal. The processes were generally those of myelitis, similar to the encephalitis of the brain, but not nearly so severe. The other lesions present were bloody, serous exudate in the peritoneal cavity, acute congestion of the spleen, hyperemia of the kidney, small hemorrhages into the suprarenal bodies, and incipient fatty degeneration of the liver. The lungs were injected. This proves that the toxins are really the actively hurtful agents.

P. C. Knapp considers that the nervous and mental consequences of la grippe, in the majority of cases, are poisoning by some ptomain, produced by the bacteria of the disease.

In five post-mortem examinations of influenza, clinically characterized by symptoms simulating those of cerebrospinal meningitis, Pfuhl found congestion of brain, cord, and membranes, meningeal exudation, flattening of the capillaries, with hemorrhagic extravasations, and, in one of these cases, a collection of pus in the cerebellum. In all of these cases bacteriologic examinations disclosed, in the blood-vessels and lymphatics, the presence of the bacilli described by Pfeiffer as characteristics of la grippe. In some situations the bacilli had formed thrombi; they were also found in the liver, spleen and kidneys. They were commonly associated with the bacilli of decomposition and two different forms of diplococci.

Diagnosis.—The diagnosis of la grippe, except in ill-defined or sporadic cases, rarely presents serious difficulty. In obscure cases we should have bacteriologic examinations made if possible. Coronado advises to draw a drop of blood from the finger into a tube, plug with cotton, lay aside twenty-four hours, and it will then show a culture of diplo- and strepto-bacilli, characteristic of la grippe, extremely motile, and easily visible with a 600-diameter microscope.

Most writers and teachers recognize three distinct forms of la grippe: 1, simple without complications; 2, where it is complicated with serious pulmonary affections, especially bronchitis and pneumonia; 3, when the digestive organs and nervous system become involved.

Ordinary catarrhal affections are sometimes hard to

discriminate from sporadic cases of la grippe. The former are usually attributed to sudden and great vicissitudes of temperature or exposure to strong drafts of air, while the latter come on independently of seasons of the year and of such agencies.

La grippe is usually accompanied with nervous symptoms and debility out of all proportion to the other manifestations of the disease.

We have had in our city, during January, February, March and April, 1899, cases presenting nearly every variety. The mild catarrhal form is that in which many patients only complain of cold in the head, general malaise, soreness and often aching of the entire body, and especially of the back, neck and head, with slight febrile symptoms which usually pass off in from two to five days, but often leaving a feeling of general prostration. In the second form all the symptoms of the first are intensified. Severe throat, bronchial and lung trouble may supervene from the onset of the disease. There is often severe pains and soreness in the limbs, weakness of certain groups of muscles resembling acute rheumatism. Ocular lesions are manifold, especially of the optic nerve, retina and conjunctiva.

Ear complications during the present epidemic have been numerous, often very painful, causing sleepless nights and suppuration, but as a rule ending in a complete recovery in a comparatively short time.

The lung complications have been of a varied and interesting type. The pneumonia, complicating la grippe, differs from the typical disease. It rarely sets in with a decided rigor, and the inflammatory symptoms, notably the pain in the side, are but little marked. The local processes are not characteristic. Local signs come on slowly. Crepitation can be heard over a considerable area, and usually disappears rapidly, not often reaching the process of hepatization with definite dulness. The typical rusty sputum is wanting, but we have, instead, a free, frothy, bright, bloody secretion, which is often abundant and lasting till after the febrile symptoms have subsided. Pleurisy is often associated with la grippe pneumonia. Empyema, gangrene, and abscess of the lungs may arise as complications. The genito-urinary tract may be invaded and even acute nephritis may appear as a complication. Cardiac complications sometimes arise and cause alarming symptoms. Gastro-intestinal complications are not so frequent, but very important, as they often bring about a very serious condition. It is believed by many observers, both in this country and Europe, that the bacilli pass from the throat and nose into the stomach, and thence invade the whole intestinal tract, causing various forms of gastro-intestinal trouble.

M. Faisan of France said, in a paper he read before a medical society, March 29, 1899, that he had observed a large increase in the number of cases of appendicitis during the epidemic of la grippe. The same observation has been made by several writers in this country. A few cases of appendicitis following la grippe have come under my observation. Dr. J. B. Stinson wrote me a short time ago that he had had an attack which caused an acute appendicitis, necessitating an operation; but he still lives to demonstrate the value of scientific surgery.

I will give a brief report of two typical cases of the severe nervous type, which will illustrate that form of the disease.

CASE 1.—T. B., aged 3 years, was taken Feb. 6, 1899, with fever and the usual severe symptoms of la grippe. He complained of aching all over, severe pain in head, back and right side, with marked hyperesthesia of the whole body. Nausea and vomiting, with high temperature, continued for thirty-six hours. The fever had run from 103 to 105 during this time. The cough was troublesome and tight. Slight dulness with some crepitation could be detected posteriorly over the lower part of the right lung.

At the end of the first thirty-six hours the fever subsided some, but more or less delirium with prostration continued. The lung symptoms subsided in about ten days, but catarrh of the nose and throat continued troublesome. He would frequently complain of pain in his head, and would toss it from side to side. His fever vacillated from 101 to 105, for seven weeks, with nervous symptoms all the time, and weak, rapid heart action. He would frequently cry out with pain in an arm or leg. About the fourth week he had marked paresis of the laryngeal and pharyngeal muscles. He could only be understood with difficulty, and, in forcing him to take nourishment and medicines, he would often strangle. He emaciated until he looked as though the skin was adhering to his bones. During the whole time, he required anodynes to produce rest. About the end of the seventh week, the fever and nervous symptoms began to subside; feeding became less troublesome and all symptoms very slowly improved. It is now about ten weeks since he was stricken, and he is still unable to sit up, but he has a good appetite, rests well, the bowels move naturally, and every indication now points to a complete recovery.

CASE 2.—J. A. H., aged 18 years, came to me the afternoon of March 19, 1899, complaining of aching all over, especially the head and back. His temperature was 101, pulse 100, tongue slightly coated, and bowels constipated.

I prescribed a purgative of calomel and soda to move the bowels, acetanilid in five-grain doses, to subdue pain and fever, and quinin with Dover's powders to take after the bowels moved.

He went to his room, and gradually grew worse, and during the night sent for Dr. Garrett, my assistant, who administered an anodyne and ordered cold applications to the head. His temperature was 105; he was very restless and suffering from nausea and vomiting, which continued with but little rest for forty-eight hours. The second afternoon he complained considerably of pain in his back, head and limbs, and became delirious and extremely restless. He was very weak, temperature 102, pulse about 60. The organs of respiration were only slightly affected.

We thought for a while that we were going to have a case of cerebrospinal meningitis, but the third day his symptoms grew some better; however, he continued very nervous and restless, complaining, when awake, of his head or pains in his body. I used morphia hypodermically to produce rest, and strychnia and digitalin to sustain the heart's action.

On the fifth day he suffered intensely with pain along the sciatic nerve, which continued unless under the influence of morphia. His temperature gradually went to normal, but his pulse, when pain was severe, would go down to 48, with small volume and very soft. In this condition he was more or less delirious, and had cold extremities. The hypodermics would relieve and cause him to rally.

By the end of the second week he had improved considerably, the pain in his head, back and limbs had subsided, but the prostration was great. For three or four days during the third week, he suffered considerably

with pain in his left ear, which continued slightly all the time and it would be so severe at times that hypodermics of morphia were necessary; stomach would also become nauseated from the pain, which prevented using it internally.

There was no perforation of the drum nor discharge from the external ear. During the fourth week all symptoms subsided, but convalescence was slow.

The nervous symptoms in these cases were so well marked that I hope they will be of some interest to this ASSOCIATION.

Treatment.—In this we have no specific, and each case should be studied and treated symptomatically. To allay the pains and soreness and restore free elimination from the skin, kidneys and intestines, are the indications which should guide us in our therapeutic applications.

In the beginning, I clear out the bowels with calomel and soda bicarbonate, say 1 to 2 or 3 grs. of each every hour as indicated, until sufficient has been taken to act. Acetanilid or phenacetin, alone or combined with Dover's powder, 2 to 5 grs. of the former and 1 to 3 grs. of the latter every three hours until slightly cinchonized, and repeated for two or three mornings, does good. If the muscular soreness and pain is very pronounced, I give sodium salicylate in 10-gr. doses every two to four hours until relieved.

For the bronchial irritation, I often prescribe:

Syr. acacia, q. s.	℥iii
Syr. ipecac.	℥iii
Morph. acet.	gr. i
℞. Liq. ammo. acet.	℥ii

M. Sig. Teaspoonful every two to four hours as indicated.

When the pulmonary symptoms are more marked by cough, pain in the side, with dulness over a portion of the lung, and crepitation, I usually give: tinc. digitalis, 15 minims; carb. of ammon., 5 grs.; in simple syrup every two to four hours; and commence early with strychnia sulph., 1-40 gr. every three to six hours as indicated. If pain is severe, use morphia subcutaneously, but never use it unless clearly demanded.

For the relief of pain of pleurisy or pneumonia, I use an oil-silk jacket lined with domestic, and apply under it, to the affected side, a poultice made of 7 parts of flaxseed meal to 1 part of mustard. When applied this way it retains its moisture twenty-four hours or longer, and the heat can be kept up if desired by applying externally, over the clothing, a hot-water bottle, or a bag of hot salt. When the pain and other symptoms continue without any amelioration, for three or four days, a blister over the affected portion of the lung has usually given me satisfactory results.

If gastro-intestinal complications arise, they should be treated with appropriate remedies. In irritability of the stomach, with diarrhea, 1-10 gr. doses of calomel combined with 1 gr. of bicarb. of soda, 5 gr. each of salol and sub. nit. of bismuth every two or three hours, is very beneficial. Give Dover's powder or deod. tinc. of opii, if necessary, for the pain. If the stomach is too irritable for this, use morphia subcutaneously or deod. tinc. opii per rectum. Often, lavage of the stomach and bowels with a warm solution of boric acid, 60 gr. to the quart, is followed by much relief. If this is not done, salines may be needed to clear out the alimentary canal.

When severe nervous symptoms are among the complications, our skill is frequently taxed to its utmost. If head symptoms are acute and the pulse strong, antipyrin, phenacetin, or bromid may be tried, and if not relieved hypodermics of morphia may be given.

When the pain is attended with much fulness and roaring sounds in the head, I have had very satisfactory effects from nit. of pilocarpin, 1-20 to 1-5 gr., subcutaneously every six to twelve hours.

In all cases the patient should remain quietly in bed, and the room should be kept well ventilated and warm, but not overheated. The diet should be light, and nutritious, and given methodically. Stimulants should be used as indicated. Convalescence ought to be well guarded, as relapses are common.

CEREBRAL HEMORRHAGE.*

BY J. M. AIKIN, M.D.

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OMAHA, NEB.

Cerebral hemorrhage is commonly regarded as of rare occurrence, and is expected in the aged only. That we should suspect it in middle life, youth, and even childhood, more frequently than has been our custom, is doubtless true. It occurs oftener in the male than in the female, and is of all cerebral affections the most common. A greater proportion of cases obtain among persons residing in the temperate climates than on other parts of the globe; and more attacks occur during the winter season than in summer.

Gowers says, "taking all forms together, meningeal hemorrhage is far more frequent, both in youth and in the middle period of life, than intracerebral bleeding." The text-book picture, of the short, stoutly built, high-shouldered and thick-necked man with a florid face, as being the typical type for a cerebral hemorrhage, is worthy of consideration, because of its antiquity only; for an observing person who has seen any considerable number of cerebral hemorrhage patients will be impressed by their frequency in those of the opposite build and temperament.

We sometimes confuse cause with effect; for apart from an external injury producing immediate bleeding the sudden giving away of a blood-vessel in the brain is but the culmination of an arterial degeneration. Etiologically, we must consider the existing pathology in the artery; morbid blood states that may cause such pathology, or the normal blood under the influences that actually rupture the vessel. We pass the traumatic element, to consider the causation in a spontaneous cerebral hemorrhage. So long as the walls of an artery are in a healthy state, they seldom if ever give way, however great the pressure from within. When a rupture does occur then, it is because the walls are weakened. Impairment may be due to tissue degeneration, without change in the caliber of the vessel, or thickness of its walls, by reason of syphilitic virus, lead poisoning, alcoholic or other toxic elements carried in the blood, just as the arteriosclerosis in the aged is, in many cases, a calcareous deposit. Or in the absence of a morbid blood state, any influence causing and continuing an increased blood-pressure will distend the arterial walls at the expense of their thickness. This condition persisted in, gives rise to a periarteritis, thickening of the lymph sheaths, with consequent changes in the muscular tissue in the walls, favoring the formation of miliary aneurysms. It is alleged that hemorrhage is more frequent among men, while embolisms maintain a higher per cent. of frequency in the other sex. If we accept the former as in reality true, it may at least in great part be explained by the mental strain imposed on business and professional men—rather than women—who

* Read before the Elkhorn Valley Medical Society, Norfolk, Neb., July 11, 1899.

assume the aggressive part in life's responsibilities. Men in every position of mental application are exerting their utmost efforts for material and intellectual supremacy, using every known artificial aid to stimulate their fatigued nervous system to greater efforts until, exhausted, they collapse by over-pressure. One other etiologic element contributing to the pathology favoring cerebral hemorrhage, possibly more potent for evil than any other cause we have yet suggested, is the high mental pressure enforced on school children, by requiring the maximum amount of intellectual effort, and the minimum attention paid to their physical growth. This fault, prevailing as it does to an alarming extent in the city schools, is materially lessened in the rural districts, where manual labor and outdoor exercise being compulsory, develop the physical, commensurate with the intellectual growth.

We may not as yet, be fully able to recognize some potent factors causing diseased vessels, but post-mortem facts reveal miliary aneurysms as very frequent in persons from 20 to 30 years old, and they are by no means rare in the earlier years of life. The old but erroneous belief that arterial degeneration belongs to the aged only, doubtless has led some good clinicians into error. Whatever may have been true in generations past, regarding the integrity of the vascular system in early life, we are forced to confront the fact that the high mental pressure of modern commercialism and specialism tends to bring the old age period to the individual, sooner than in former years. The persons who represent the physical and mental activities in life's duties are not among the easy-going careful livers. Nervous tension is begun early—even in the kindergarten—and relentlessly pursued to the counting-room or professional calling, regardless of natural laws governing the physical organism.

Reviewing the history of recorded symptoms in cases of sudden cerebral lesions, we find a multiplicity of clinical manifestations evidenced by a disturbed nervous economy; but the observing clinician has noticed the frequency with which like clinical manifestations in the nervous system point to widely different pathologic conditions. Thus, when we have expected a hemorrhage and found an embolism, or a tumor and found an abscess, our faith in the clinical evidence is weakened, and we are unwilling to pronounce on a cerebral hemorrhage, unless certain well-marked and long-established symptoms point with unvarying certainty to an apoplexy in the brain. In the "minor," "partial" or "delayed" apoplexies impairing motor power in one limb or group of muscles, with the sensory and intellectual powers normal, we defer our diagnosis. If in addition to impaired motor power, there is disturbed sensation or impaired mental powers, we are more certainly perplexed in making a diagnosis.

These form the class of cases that are becoming proportionately more numerous, and in which we are almost certain to find miliary aneurysms that are the logical result of some one or more of the etiologic factors to which I have referred. The immediate cause of the rupture need not be more than a slight emotion, physical exertion or excitement, sufficient for a temporary increase of blood-pressure.

Conscious of this uncertainty of manifestations by the nervous system, for differential diagnosis of a cerebral hemorrhage from other cerebral lesions, I began a series of observations on the pulse and temperature record, and found a slow, undulating or wave-like radial pulse quite characteristic and constant in cerebral bleeding, while the temperature was either normal or a little sub-normal. These conditions obtain only during the early hours of a hemorrhage, and if the pulse is as indicated, with an existing normal temperature, the bleeding is probably of capillary origin and progressive. My observations are in harmony with the principle laid down by Nothnagel and emphasized by Gowers, that the most important indications of the nature of sudden cerebral lesions are derived, not from the nervous symptoms, but from those of the vascular system.

Our treatment, then, whether medical or surgical, must be in the direction of stopping a leakage in one or more arteries. In this, as in internal bleeding in other parts of the body, absolute rest in the prone position is imperative. The introduction of such drugs as tend to contract the arterioles should be given subcutaneously or by the mouth. Pressure in the bleeding vessels may be lessened by the proper use of such remedies as will cause a determination of blood to the kidneys, or other secretory organs, this being especially true when the case presents a high blood-pressure. Surgery through the calvarium, for the purpose of making local pressure or ligations, has not been resorted to in many cases, but it is certainly a broad and interesting field for investigation, that should receive more attention than has hitherto been exercised.

To arrive at a knowledge of when and where to operate necessitates, not alone the diagnosis of a cerebral hemorrhage, but its topical location, for which both neurologist and surgeon must work together. Inasmuch as the sudden and profuse hemorrhages are usually quickly fatal, the cases most suitable for operative action are the slowly progressive bleedings for which I have, in this paper, attempted to assist my fellow-physicians to an early diagnosis.

THE SCOPE OF THE UNITED STATES PHARMACOPEIA*.

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The object of this paper is not to urge any pet suggestions for the improvement of the "U. S. Pharmacopeia," but mainly to offer the results of some work in the direction of collecting opinions, which are believed to well represent the medical profession, bearing on the present status and future usefulness of the book.

It will be admitted that the "U. S. Pharmacopeia" must have been born of a need on the part of the medical profession. Its plan originated in the Medical Society of the County of New York, in the year 1818, having been proposed by Dr. Lyman Spaulding; and its promulgation and its perpetuation for the first thirty years were effected entirely through the efforts of physicians. These facts must stand as proof that the need of such a book was regarded as fundamental; and in the plan of successive revisions we see evidence of a belief that such need must be perpetual.

These points in history will bear emphasis at the present time, when physicians possess so little knowledge of this work. It is safe to say that, the country over, not one physician in one hundred either possesses a copy of, nor has any direct acquaintance with, the "U. S. Pharmacopeia." Either physicians have drifted away

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

from the book or else it does not meet their present needs.

It may be presumptuous to remind the members of this Section of the unique character of this work. It is a standard first and last. As such it is the property of the professions of medicine and pharmacy, without any individual proprietorship whatever. These professions, therefore, have the power to make the volume what they will, unhampered by any vested rights, and this is an immense advantage in maintaining both its standard character and the strictly disinterested quality of the information it contains. This advantage must always be zealously guarded.

Before discussing the question of scope you will permit a reference to the increasing excellence of successive past editions. Credit for this is due to both professions, for in the preparation of the more recent issues the work of pharmacists has been prominent and valuable. The great interest taken by pharmacists in the work of revision was particularly shown in the composition of the pharmacopeial convention of 1890, where, of a total of 190 delegates, only 85 represented medical colleges and societies, while 105 represented pharmacal colleges and societies.

We must not undervalue the importance of pharmacal aid; but, recalling the fact that the book was originated by physicians in response to a need on their part, are we not shirking our duty in respect to its perpetuation when we allow pharmacal influence to predominate in the convention which directs its issue?

There is some difference of opinion as to what should be the scope of the book. A most conservative view—one that is based on a full recognition of its position as a standard—would strictly exclude every article that has not stood the test of time and of ethics, or of which positive physical or chemical qualities can not be taken as determining purity or strength. On the other hand, an ultraliberal view would admit many new substances, for the purpose of putting them on trial so as to test their value. Between the two there are all grades of opinion; and, while the former view has prevailed in the past, during the present decade there has been much discussion of the question of introducing new features in the next revision.

While all such discussion has undoubtedly been from proper motive and with a desire to serve the best interests of medical science, we must not forget that one object, that of maintaining a standard, must be paramount to every other. The Pharmacopeia is nothing if not a standard. But with new therapeutic requirements we may of necessity be nearing the view-point which would make its scope as broad as its character as a standard will permit. We may also have to admit other than physical and chemical tests for certain substances. For example, we will doubtless agree that antitoxin should be made to conform to some standard. But how can we fix a standard for it within present pharmacopeial usage? The question is certainly complicated by the fact that our materia medica has been much enlarged in recent years by the introduction of whole new classes of remedies—the synthetics, the serums, the products of gland function, etc. Moreover, the recognized indifference of the medical profession toward the work may be vitally related to the scope of past editions. Does it meet the needs of the physician in his present use of remedies? The question therefore is not a simple one.

It was with this view that a committee of the Medical Society of the State of New York, two years ago, began efforts in the direction of increasing medical interest in the Pharmacopeia, some of the results of whose work I take pleasure in presenting to you.

To begin with, it seemed essential to ascertain prevalent medical opinions of the "U. S. Pharmacopeia." The men who would be most competent to pass opinion on the book, by reason of acquaintance with it, would naturally be the teachers of materia medica and therapeutics in our colleges. It was believed that this class of teachers would fully represent medical views. Therefore, to them were addressed the following questions: 1. Do you find the "U. S. Pharmacopeia" meeting the demands as a standard for drugs and preparations? 2. Is it abreast of the present advances in medical and pharmacal science? 3. What in your opinion stands in the way of its more general use by practicing physicians? 4. What can you suggest in a general way in the line of improvements in the "U. S. Pharmacopeia" at its next revision?

Sixty responses were received. The deplorable lack of familiarity with the book was shown by the fact that even a few teachers of materia medica confound the Pharmacopeia with the "U. S. Dispensatory."

Exclusive of these, the answers to Question 1 were as follows: Yes, 34; yes, qualified, 7; no, 9.

The answers to Question 2 were: Yes, 29; yes, qualified, 9; no, 11; no, qualified, 4.

The varied character of the responses to Question 3 does not admit of any concise tabulation. We will therefore simply group them so that the more common tendencies of thought indicated by them may appear. Among the reasons given in answer to this question we find: 1, as relating to the character of the book, 9, mention impracticability, 8 incompleteness, 5 speak of lack of business enterprise and 2 of surplus of obsolete drugs; 2, as relating to the attitude of physicians, 11 charge them with ignorance or indifference, 5 mention their use of ready-made compounds and 3 give bad teaching as a reason. In addition, 8 give a reason which is no doubt quite potent, viz., the enterprise of proprietary manufacturers.

The suggestions in response to Question 4 are numerous, varied and interesting. They bring into prominence particularly the questions of: Lessening the present contents of the book; extending its scope by the introduction of doses, and otherwise; more frequent editions or issue of supplements, and furnishing information on new substances.

Following the lead of these most prominent suggestions, a series of more definite propositions was prepared and later submitted to the same class of medical men, and 100 responses were received, answered as follows:

To Proposition 1, that all drugs and preparations not now prescribed to any extent by physicians be dismissed, the answers were: Yes, 55; yes, qualified, 11; no, 2; no, qualified, 5; no comment, 27.

To Proposition 2, that all chemical drugs necessary to other preparations, but which are not directly prescribed, be placed in a list apart from the body of the work, the answers were: Yes, 91; yes, qualified, 2; no, 2; no, qualified, 2; no comment, 2.

To Proposition 3, that doses be included in the next revision, the answers were: Yes, 88; yes, qualified, 3; no, 6; no, qualified, 2; no comment, 1.

To Proposition 4, that doses be placed in the index rather than in the text of the book, for readier reference and to avoid making them official, the answers were: Yes, 63; yes, or in an appendix, 4; yes, qualified, 3; in both text and index, 10; no, 12; no, qualified, 8.

To Proposition 5, that a section be devoted to giving reliable information concerning new remedies, without in any sense making them official, the answers were: Yes, 83; yes, qualified, 8; no, 6; no, qualified, 2; no comment, 1.

To Proposition 6, that an annual supplement of a few pages, for the purpose of continuing similar disinterested information concerning new drugs, be issued, the answers were: Yes, 80; yes, qualified, 5; yes, or biennial, 3; no, 7; no, qualified, 3; no comment, 2.

The comments which accompanied these replies indicate a very decided sentiment in favor of making the next issue of the Pharmacopeia a book of greater practical value to physicians; the large majority of affirmative answers to all of the propositions should at least entitle them to consideration by all who are interested in this subject. It is to be hoped that they among others may be taken up by the journals and be freely discussed before the Pharmacopeial convention meets.

Another suggestion which has gained some currency during the past year is equally entitled to consideration. I refer to the suggestion that incompatibles be named in connection with each official substance as far as is practicable.

There are other items, such as that of extending standardization, which this paper might have been expected to take up, but such fall now within the recognized province of the Pharmacopeia, and are therefore matters of practical detail rather than of scope of the work as a whole.

Finally, it should be urged on every medical society and college entitled to representation in the coming convention, to choose delegates and secure their attendance, so that a large number of practicing physicians and teachers may take part in its deliberations.

For the sake of medical science as a whole and of sound therapeutics in particular we can not afford to neglect this important work.

SURGICAL TREATMENT OF HIGH MYOPIA.*

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Myopia of high degree is extremely rare in my personal experience. This is somewhat remarkable as a considerable proportion of my constituents are of German extraction. I have measured the eyes of more than 6000 patients during the last ten years, in my private practice, and I append a table showing refraction of 5000 eyes. These statistics only include those cases in which a complete examination of the eyes under a cyclopegic was made, all doubtful cases having been eliminated.

Refraction.	Number of Cases.	Percentage.	Percentage.
Myopia	179	3.7	
Myopic astigmatism	295	4.	17.3
Compound myopic astigmatism	481	9.6	
Hyperopia	1192	23.8	
Hyperopic astigmatism	562	11.2	77.
Compound hyperopic astigmatism.	2098	42.	
Mixed astigmatism	283	5.7	5.7
	5000	100.	100.

I was somewhat surprised to find out that out of 5000 eyes there were only 179—3.7 per cent.—of simple myopia, and that including simple myopia, myopic astigmatism and compound myopic astigmatism, altogether there were only 955 eyes—17.3 per cent.— with myopia. A table is appended of the 29 eyes having high myopia over 10 D., which are only .58 per cent. of the whole number.

	Refraction.	Treatment.	Remarks.
1	−10.0 Diopters. −14.0	Correction of refractive error.	Extreme choroidal atrophy, mac. degen., post staphyloma.
2	−17.0 −13.0	Correction. Correction.	Post-staphyloma, spots in vitreous beginning lentic opacity.
3	−16.0 −16.0	Correction. Correction.	Staphyloma, central chorio-retinitis, R. E. O. N. A.
4	−16.0 −16.0	Correction. Correction.	Conical cornea.
5	−16.0 −16.0	Correction. Correction.	Advised operation, not accepted.
6	−12.0 −12.0	Correction. Correction.	
7	−11.0 −11.0	Correction. Correction.	Hydrops, corneal irreg. astig. staphyloma from ophthal. neonat.
8	−10.0 −10.0	Correction. Correction.	
9	−13.0 −13.0	Correction. Correction.	Post-staphyloma.
10	−13.0 ⊂ −1.00, 180° −10.0 ⊂ −1.50, 180°	Correction. Correction.	Choroiditis.
11	−10.0 ⊂ −2.00, 180° −10.0 ⊂ −2.00, 180°	Correction. Correction.	O. N. A. V. F. contracted.
12	−14.0 ⊂ −3.00, 10° −20.0 ⊂ −3.00, 175°	Correction. Correction	R. E. slight staphyloma. L. E. large, post-staphyloma, extending to macula.
13	−17.0 ⊂ −2.75, 180° −16.0 ⊂ −1.50, 180°	Operation. Operation.	Well developed conus, R. and L.
14	−18.0 −1.25 ⊂ − .75, 75°	. . . . . . Correction, L. E.	R. E. amblyopic.
15	−20.0 ⊂ −1.00, 90° −17.	Correction.	This case was attended by diplopia and 25° esophoria, which was corrected by advancement and tenotomies. The lenses are well borne.

Operation has been suggested in only two instances and accepted in but one (13). Of the others, perhaps No. 12 would have been a subject in which operation could have been conscientiously recommended had we known of, or dared to have done, the procedure. In No. 15 the strong correcting glasses could be satisfactorily used after correction of the diplopia by operation, so removal of the lenses was not considered.

CASE 1.—Miss J. L., aged 20, born in Norway, a resident of Manitowoc, Wis., was referred by Dr. J. F. Pritchard and came to the office July 6, 1897. She had worn several pairs of glasses on account of short-sightedness, but had received no satisfaction on account of the eye strain which occurred when she wore them.

Family history.—Father had good eyes; died of yellow fever in middle life; mother living and in good health; has always had weak eyes but never wore glasses; has had only the one child.

Personal history.—Patient had pneumonia at the age of 2 and again at 11; has never been strong and is now anemic; has always complained of weak eyes; has found it very difficult to study; has been very near-sighted since adolesence; has been employed as a house servant.

Examination showed a high degree of myopia with well-developed conus in both eyes; no opacities of vitreous; opthalmometric measurement showed corneal astigmatism:

R.=2.75, 90°. L.=2.25, 105°.

The refraction was:

R.=−16.00 ⌒ −3.50. V.=−6/36.

L.=−14.00 ⌒ −1.25, 180°. V.=6/36.

For distance this correction was given, and a reduction of 4 D. from spheres for close work. These glasses were better borne than those which she had been wearing, but she was unable with them to follow up her ambition of becoming a dressmaker.

June 15, 1898, operation for removal of the lens was ad-

*Presented to the Section on Ophthalmology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

vised, accepted and the patient sent to the hospital. On the following day, discission of the right lens capsule was performed under holocain anesthesia and atropin mydriasis; but little reaction. July 2, 1898, a second discission was done, which caused considerable reaction, although the patient was allowed to go home. July 14 she wrote that she had great pain; anterior chamber shallow; lens decidedly swollen. July 26 she came to the hospital; lens greatly swollen, disintegrating and bulging into the anterior chamber; tension +2; lens matter was removed by linear incision under holocain anesthesia, a clear pupil immediately resulting. The further course was uneventful.

September 16 the ophthalmometer showed corneal astigmatism in the eye operated on, of 2.50, 105°, with +1.00 ⌒ +2.00, 115°, V.=6/24; with addition of +3.50 sphere Sn. 1 was read at 0.50.

September 17, the effect of the operation having been satisfactory in the right eye, a discission was done on the left lens capsule, and at first was followed by no reaction, but two weeks later the lens became so much swollen that tension increased and pain occurred, so that it was extracted October 1, by linear incision, which was followed by clear pupil. The further course was uneventful.

November 15 a secondary operation was done on the capsule remaining in the right eye. At this time the ophthalmometer showed corneal astigmatism for the left eye, 4.25, 75°. The refractive condition was:

R.=+1.00 ⌒ +2.00, 115°. V.=6/24.
L.=+ ⌒ +3.00, 75°. V.=—6/24.

With these she has binocular vision and with the addition of 3.50 spheres for the near point can read Sn. 1.0 at 0.50.

She has been seen or written several times since, and expresses herself as being very well satisfied with the improvement of vision and with the increased use of her eyes which she has obtained through the effect of operation. Under date of Dec. 21, 1898, she wrote me "that she could see first-rate in the distance but not so well near by." It may be that readjustment of the reading glasses will satisfy her more completely. There has been no tendency toward any other complication than that from the excessive swelling of the lens, and to this date the eyes are in very much better condition than before the operation.

Through the kindness of Dr. Chas Zimmermann[56] of Milwaukee, I am enabled to describe the following case of high myopia which he has treated by discission and which I saw with him in consultation, April 9, 1898:

CASE 2.—A well nourished male, aged 25, applied to Dr. Zimmermann on Feb. 8, 1898, with binocular myopia. Vision: R. and L. fingers at five feet, not distinctly; read No. 1 Sn. at 2½ inches; vision with —20, O.D.=fingers at ten feet; ophthalmoscopy and skiascopy show about —20, O.D. There were floating opacities of vitreous in each eye, large staphyloma posticum and choroidal changes; visual fields apparently normal.

Feb. 9, 1898, discission of the right anterior capsule was done, the crucial incision with knife needle in atropin mydriasis. February 13 the lens was opaque; some opaque lens matter in the anterior chamber; slight ciliary injection, no pain, tension not increased, daily massage of the eyeball in order to stir the opaque lens matter was made.

Since the absorption did not progress, March 1, 1898, second discission was made more extensive and deeper into the lens substance. The next day there was no pain nor unpleasant reaction; more opaque lens matter in the anterior chamber. April 9 the anterior chamber was full of lens matter, some of which projected from the capsular wound; the whole lens, especially the center, had a more bluish appearance, a sign of advanced absorption. As there was no need of extraction, he was allowed to return to his home in Minnesota with the advice to immediately come again if symptoms of irritation should set in.

In answer to an inquiry, Jan. 23, 1899, a letter was received stating that the lens matter has been entirely absorbed except a small circle around the pupil. June 28, 1898, an opening in the center had been formed which grew larger until about two months ago, when no further change occurred. He can see very much better than before, can read ordinary print at twelve inches, whereas before he had to hold a book at two inches. He expects to return for the final discission of the posterior capsule and operation on the other eye.

These two cases are the only ones to my knowledge that have been operated on in the Western States with the exception of several in Chicago by Dr. Casey A. Wood, who, with Wm. F. Smith, performed the first published operation in America, 1890[53]; and others of which I have only indirectly heard. Both the above cases have apparently been satisfactory to the patients. In Zimmermann's case only two discissions without extraction accomplished absorption of the lens. The refraction being about—20 D. it was well adapted for procedure. The patient will ultimately be enabled to either do without glasses for near work or simply have the correction of his astigmatism made, and wear but weak concave lenses for distance. In my own case it was necessary to do linear extraction upon both eyes. The advantages gained for distance have been much greater than those for near work.

Up to the year 1890 total or partial opacity of the lens was the only recognized indication for removal; with the exception of cases of dislocated lenses described by Harlan[15], Alt[1], etc. In 1858 Mooren[32] reported cases of removal of cataract in myopic patients. In 1894 Fukala[9] published a series of 114 cases of removal of the clear lens by discission, or by his third and subsequent extraction. In 1895 Vacher[49] proposed extraction of the clear lens for high myopia, but this procedure has not met with acceptance among the majority of surgeons who have been bold enough to attempt operation in this class of cases.

The refractive conditions applicable for the operation, range from minimum of—10 D. (Hirschberg[21]) to—14 D. of other writers; Schreiber[44] says —16.0 D. The highest degree yet operated on was in a patient of Schweigger's[46] who had —33 D. The amount of lowering of the myopic refraction depends on the amount of axial myopia present, and is not the same for all eyes. If the lens be removed from an emmetropic eye, it becomes, according to Donders[4], about from 10 to 11 D. hyperopic. However, there is another condition to be counted on in the case of myopia, and that is, increase in the length of the eyeball. By the removal of the lens in an eye approximately—17 to—18 D. emmetropia for distance is produced. Even so recent and so thorough a work as that of Stricker is an error on this point; the same will be found in Donders, Helmholtz[20] and Landolt[25].

Edward Jackson[22]* gives mathematic calculations regarding the results produced by the removal of the lens in the following which is according to measurements from the schematic eye of Helmholtz: "In the normal emmetropic eye the rays which strike the cornea parallel reach the second lens, the crystalline, converging to a point 31 mm. —6=25 mm. behind it. They reach the crystalline, then 40.0 D. convergent. To this is added 20.0 D., the converging effect of the crystalline, making 60.0 D. The rays are, therefore, focused 1000÷60=16.667 mm. behind the crystalline. 16.667 +6=22.667, the anterior-posterior axis of the emmetropic eye. If we remove the crystalline lens and replace its effect by adding to the refractive power of the cornea, the refractive power required to be so added is the strength of a convex lens correcting the hyperopia caused by rendering a previously emmetropic eye aphacic. After removal of the crystalline, the cornea would require to have a strength of 1000÷22.667=44.12 D. —32.26, the refraction of the normal cornea, equals 11.86 D., the hyperopia measured at the cornea pro-

duced by extraction of the crystalline from the emmetropic eye. To correct this hyperopia the lens placed at the ordinary distance of a lens in front of the eye would be a convex 10.5 D."

"In contrast to the above, let us use the dioptric eye to ascertain the amount of previous myopia necessary for the removal of the crystalline lens to render the eye emmetropic. To give emmetropia after removal the retina must lie 31 mm. behind the cornea. To be focused upon the retina, rays must leave the crystalline converging toward the point 25 mm. behind the crystalline; that is 40 D. convergent. If they must be rendered 40 D. convergent by the crystalline and its refractive power is 20 D. they must have been 40—20= 20 D. convergent when they fell upon the crystalline. They must have been converging toward a point 1000 ÷20=50 mm. behind the crystalline, which will be 50+6=56 mm. behind the cornea. Such rays must have left the cornea convergent 1000÷56=17.86 D. convergent. If they are rendered thus convergent by the cornea having a refractive power of 32.26 D., they must have been divergent on reaching the cornea, to the extent of 32.26—17.86, 14.40 D. as measured at the cornea. Such a myopia would be corrected by concave lenses of 17 or 18 D. placed the ordinary distance in front of the cornea. This, then, is the amount of myopia as ordinarily measured and expressed, that can be corrected by removal of the crystalline."

Hirschberg[21] gives a rough rule for the estimation of the ocular refraction before and after removal of the lens, which is approximately correct: To obtain the correction for distance of the myopic eye after operation, deduct one-half the amount of the correction of the myopia before the operation from 10 D. Salzmann[37] states that the most desirable effect in removal of the lens in high myopia would be not to leave the eye emmetropic, but slightly myopic—2 to 3 D. If the myopia be greater than 18 D., concave glasses for distance are necessary, and the patient may perhaps be enabled to get along without glasses for near work. This is exemplified by Zimmermann's[56] case.

Mooren[31], basing his statements on observations covering 150,000 cases, claims that the wearing of full correcting lenses in myopia for near work is pernicious and is to be condemned because they require exercise for the accommodation, induce ciliary spasm, intensify the refractive error and cause progressive myopia, and states that there is danger in such an event, of detachment of the retina and slow inflammatory changes. In contrast to this is the statement of Edward Jackson[22], that high myopia has probably been more generally relieved by lenses here than abroad. (See Case 15, my series.) The statement that patients can never wear lenses of —13 to —15 D. with satisfaction is disproved by our practical experience. Correction of over —18 D. by lenses is impracticable in many instances, on account of the smallness of the retinal images, the spheric and prismatic aberration therefrom resulting.

Some authors—Von Hippel[16], Vacher[49], Valude[50], Pflueger[34], [35], Everson[6]—claim that after the removal of the lens in high myopia there is an actual shortening of the globe, and that the operation is a preventive measure against progressive myopia, for it hinders further lengthening of the eyeball. American and English authors—Sattler[38], Lawford[27], Cross[2]—are more conservative, and state that the operation is contraindicated in all excessive degrees of congenital or acquired myopia in which a tendency to inexorable progression must be admitted, together with unmistakable evidences of structural disease of the uveal tunic, vitreous humor and retina. Von Hippel[16] has operated in 114 cases, mainly by discission, with extraction of the lens mass in some cases, and confines operative interference in children and young adults in whom the myopia shows a progressive tendency and in myopia adults who can not follow their occupation by the use of glasses; in no case operating unless the myopia has advanced at least 12 D. It is advisable to operate on both eyes.

Magen[29] and Sattler[39] of Leipzig report satisfactory results in patients up to 64 years of age. Fukala[13], Pflueger[35], Vacher[49], and Schweigger[46] have operated most successfully on young adults, and on a few between 35 and 50 years of age, but recommend the operation only in young patients where the chorodial changes are stationary. Fukala[12] does not consider an eye suitable for operation unless vision is equal to 1/10 with the correcting lenses, and the patient should be able to read Jaeger No. 1. Other German authors, particularly Magen[29] and Fröhlich[8] are more radical, recommending discission for complicated cases of high myopia in all ages.

We have the choice of two methods of operation, both of which lead to the same end, the removal of the lens and reduction of the refraction. The operation should be invariably preceded by a carefully guarded traumatism which brings about a cataract, softens the cortical substance and loosens the nucleus from the capsule[38]. In young persons the operation of anterior discission fulfils this indication. One or two subsequent discissions may cause subsequent absorption of the lens substance after several months; but in the majority of cases, after the first or second discission, it will be found necessary to evacuate the contents of the capsule by linear extraction. Magen[29] shows that the nucleus of the lens in high grades of myopia even in old persons is never hard and may be satisfactorily dealt with by discission. Sattler's[39]—Leipzig—modification, which he has done on thirty patients up to date, by which he claims more rapid healing, least inflammation and less operative astigmatism, is done with the Weber hollow lancet; the nucleus and lens substance being curetted with Daviel's spoon.

Vacher[49] and Valude[50] are the chief exponents for extraction of the transparent lens, but Fukala and others state that it has been abundantly shown that extraction of the transparent lens is not the correct method. Fukala[13] recommends iridectomy and discission, but instillation of the iris is discountenanced by other operators.

The main theoretic disadvantage of the operation is the loss of accommodation resulting from removal of the lens, but does not this eliminate one of the main causes of ciliary spasm? Another disadvantage is the fact that, while we increase the visual acuity for the distance without glasses, it is usually more or less injured for the near point. It should be likewise remembered that increase of visual acuity may not be attended by increase of perceptive power. Some authors[29] say that the operation is without danger, but there is always danger in any operation on the eye, especially in incising operations. Otto[44] had increase of tension in twenty-three out of every eighty-five cases, and thinks that the worst complication from the operation is detachment of the retina. Sattler[39] had loss of vitreous in 25 per cent. of his cases.

Schreiber[44] is one of the most conservative German

writers on this subject. He thinks that too many myopes have been operated on. The operation is attended with danger from infection and retinal detachment. Most eyes have to be operated on at least three times to produce a good result, and these operations are more liable to infection than those of senile cataract. He states that 16 D. is the lowest grade that should be operated on, and even this is not advisable if the patient is able to work satisfactorily with or without this correction. Out of 5094 cases of myopia, only eighty were 16 D.—12 per cent. Of these, only thirty-six could be recommended for operation, an average of three a year in fourteen years. (Note my statistics.)

Rogman[36] publishes a very complete history of each of his twenty-one cases of high myopia treated by operative measures. The age of the patients ranged from 14 to 65 years. The degree of myopia varied from 14 D. with astigmatism to 30 D.

Fuchs[36] reports that among 18,000 new patients in his clinic only ten were found which were suitable cases for the operation.

Frölich[8] shows that the total loss in reports of 572 operations for myopia by infection was a little over 2.2 per cent., and the other danger which has been held up as especially apt to occur, that of detachment of the retina, happened in 2.2 per cent., making the total loss by infection and retinal detachment about 5.5 per cent. However, a considerable proportion of cases of myopia without operation, nearly 5 per cent.(?) sooner or later acquire detachment of the retina. In my case there was increase of tension, which might have proceeded to glaucoma had it not been relieved by removal of the lens matter by linear incision.

The results of operative treatment seem to substantiate the claims made for the operation. It should be remembered that the object of the operation is principally to accomplish the reduction of the power of the dioptric apparatus, whether the myopia be axial or dioptric or both. However, we obtain concomitant advantages: 1. Increase in the visual acuity which is two to three-fold in selected cases after correction of the residual ametropia and without correction is many fold. The ideal myopia for correction by removal of the crystalline lens is —17 or —18 D., and in such cases a perfect operative result should give 55 per cent. improvement of vision and escape all need of wearing strong lenses. The bettering of visual acuity is not synonymous with bettering of visual appreciation. Laber thinks that part of the improvement in visual acuity is due to favorable influence on the health of the retina and not to improvement of the optical condition.

The retinal images are larger after operation than before in the myopic eye that has become nearly emmetropic. The reason for this is shown by Jackson[22]: "A sufficiently accurate approximation for practical purposes may be reached by considering the effect of the increased length of the eyeball antero-posteriorly as compared with the reduced eye of Donders. In the emmetropic reduced eye the nodal point is 15 mm. in front of the retina. In the eye so myopic as to be rendered emmetropic by removal of the crystalline lens, the nodal point is the same distance behind the cornea, and the increased length of the eyeball is to be added to 15 mm. to find the distance in front of the retina. The latter eye being 31 mm. long, as against 22.2 mm., the length of the normal emmetropic eye, the difference of 8 1-3 mm. is to be added to 15, making the distance from the retina to the nodal point 23 1-3 mm. Since, for a given object at a fixed distance, the size of the retinal image is directly proportioned to the distance of the retina from the nodal point, the linear dimensions of the retinal image of such a myopic eye will be to those of the emmetropic eye as 23 1-3 is to 15. The retinal image of the myopic eye will be 55 per cent. larger than that of the emmetropic eye, the correction of myopia by concave lenses placed at the anterior focus of the eye, the position usually assumed for the size of the retinal image of the emmetropic eye. But the correction of the myopia by removal of the crystalline, carrying the nodal point only from 7.321 to 7.829 behind the cornea, leaves the size of the retinal image practically unchanged. Hence the gain in size of the retinal image by this latter means of correcting myopia is 55 per cent.; and this is about the improvement in visual acuteness that we can expect from a perfectly satisfactory removal of the crystalline lens, if the myopia is axial. If the myopia is myopia of curvature the gain will be less."

The visual field is decidedly enlarged; this is even without correction of the residual ametropia, and is especially enlarged in comparison with the effect of the stronger concave lenses which were worn before the operation. The increase in the angle of vision is brought about by the reduction of the dioptric apparatus from a compound to a simple system.

With correction there is increased range of vision for near work, although accurate vision can only be done at one fixed point, for there can be no accommodation after removal of the lens, although attempts at the same are made by the ciliary muscle.

As is well known, strong spheric and cylindric lenses can not neutralize ametropia of high degree, for the dioptric apparatus is not perfectly spheric, the cornea is an elliptoid of three axes, even the visual zone of the cornea and lens is eccentrically and irregularly astigmatic. In the highly myopic eye, the effect of these conditions is exaggerated and spheric lenses do not fully correct the error nor give normal visual acuity. The reduction of myopia by operation permits abnormalities and thus increases the visual acuity.

By the pupil being usually brought nearer to the retina after the removal of the lens; the eccentric visual rays are more excluded as the diaphragm is nearer the nodal point.

The clinical value of the operation lies mainly in the more extended use of the eyes obtained by the patients; they are most highly delighted with the effects, claiming that a new world has been opened to their view. The doing away with the annoyance of heavy concave glasses and their resultant small images and the eye strain produced by their prismatic effect, is largely responsible for this amelioration. After the completed operation, the patient has to wear two sets of lenses, but in high degrees this had to be done before. In myopia of about 18 D. after operation some patients are able to get along without any glasses for distance, as does the emmetrope and in the case of myopia 21 to 22 D. he may even dispense with glasses, just as myopes of about 3 D. get along very well without their correction.

RESUME.

1. Surgical treatment of myopia should be limited to those cases over 12 D. who suffer great inconvenience from their correcting lenses. The ideal cases for operation are those of 17 to 18 D.

2. The operation is mainly indicated in young adults.

3. Cases having active disease and changes in the ocular structures, such as progressive myopia, choroidi-

tis, fluidity of the vitreous or detachment of the retina are not applicable.

4. The dangers of operative interference are more than counterbalanced by the results to be achieved, which are mainly increase of visual acuity and of the visual field, and more extended use of the eyes, which accompany diminishment of the refraction.

The opportunities for observation of high degrees of myopia, particularly of operation for this by the American surgeon, are limited in proportion to those of ophthalmologists in the old world. By individual reports, however, we can add our evidence to the already proved value of surgical treatment for this class of cases[55].

BIBLIOGRAPHY.

(Recent Literature on the Surgical Treatment of High Myopia.)

1 Alt: Am. Jour Ophthal., 1895, p. 165.
2 Cross, F. R.: "Discussion on the Operative Treatment of High Myopia." Brit. Med. Jour., Sept. 12, 1896.
3 Distler: Physiol. Verein in Kiel, Nov. 29, 1897; Munch. Med. Woch., 1898, 114.
4 Donders: "Accommodation und Refraction des Auges," 1866.
5 Eperon: Arch. d. Ophthal., 1895.
6 Everson: See Fukala, 12.
7 Frohlich: "Spontaneous and Post-Operative Retinal Detachment in Myopia"; Arch. f. Augenhkde., xxviii, 1, 1898.
8 Frohlich: "Surgical Treatment of High Myopia"; Arch. f. Augenhkde., xxv, 4, 1897.
9 Fukala: Trans. Internat. Ophth. Congress, Edinburgh, 1894.
10 Fukala: "Beitrag zur hochgradigen Myopie"; Ber. u. d. Versam mel. d. Ophth. Geschellsch., 1896; Wiesbaden, 1897 xxv, 265-272.
11 Fukala: "Zum Werth der Myopie Operationen u. z. Berechnung der Achsenlange d. Menschlichen Auges"; Aertzl. Centr. Anz., Wien., 1897, ix, 285-287.
12 Fukala: "Heilung hochstgradiger Kurzsichtigkeit," 1896.
13 Fukala: "Zur Geschichte der Heilung hochgradiger Myopie durch Linsenentfernung"; Wien. Med. Presse, 1898, xxxix, 214-220.
14 Fergus: Trans. Internat. Ophth. Congress, Edinburgh, 1894
15 Harlan: "Contribution to the Question of Removal of the Lens in Myopia"; Trans. Sec. Ophth. A.M.A., 1896.
16 Von Hippel: "Operative Treatment of Myopia"; Deut. Med. Woch., Nov. 25, 1897.
17 Von Hippel: Munch. Med. Woch., 1894.
18 Von Hippel: Heidelberg Congress, 1895.
19 Haab: Heidelberg Congress, 1895.
20 Helmholtz: "Handbuch der Phys. Optik."
21 Hirschberg: "The Lessening of Myopia through Removal of the Crystalline Lens"; Centrblt. f. prak. Augenhkde., March, 1897.
22 Jackson, Edw.: "Removal of the Clear Crystalline Lens for High Myopia"; Ophth. Record, Feb., 1898.
23 Jackson, Edw.: "The Dioptric Eye"; Annals Ophth., July, 1899.
24 Johnson: Trans Ophth. Soc., 1895.
25 Landolt: "Refraction and Accommodation of the Eye."
26 Lang: Trans. Ophth. Soc., 1895.
27 Lawford: "Discussion on Operative Treatment of High Myopia"; British Med. Jour., Sept. 12, 1896.
28 Leber: "Visual Acuity before and after Removal of the Lens in High Degrees of Myopia"; Arch. f. Ophth., xlii, p. 218-251.
29 Magen: "The Status for Operative Treatment of High Grades of Myopia"; Wien. Klin. Woch., 1-2, 1898.
30 Meighan: Trans. Internat. Ophth. Congress, Edinburgh, 1894.
31 Mooren: "Medical and Operative Treatment of Myopia and Its Complications"; Centrbl. f. prak. Augenhkde., Jan., 1897
32 Mooren: Heidelberg Congress, 1858.
33 Pergens: Klin. Monatsbl., Feb., 1895.
34 Pflueger: Arch. d. Ophth., 1893, abstract of papers of Heidelberg Congress.
35 Pflueger: Trans. Internat. Ophth. Congress, Edinburgh, 1894.
36 Rogman: Annals d' oculistique, Jan., 1899.
37 Salzmann: "The Visual Effect of the Removal of the Lens in High Degrees of Myopia"; Annals of Ophth., 1897, Vol, vi, 437.
38 Sattler of Cincinnati: "The Surgical Treatment of Ametropia"; Ophth. Record, Dec., 1898.
39 Sattler of Leipzig: "Operation for Myopia"; Klin. Therap. Woch. and Ophth. Record, Feb., 1899.
40 Sattler of Leipzig: Trans. Heidelberg Congress, 1895
41 Schanz: A. f. Ophth., xli, 1, 1895.
41 Schmidt-Rimpler: Trans. Internat. Ophth. Congress, Edinburgh, 1894.
43 Schoen: Arch. d. Ophth. 1894, abstract of paper.
44 Schreiber: Festsch. z. Feier d. 50 jahr. Bestehens d. Med. Gesellschaft zu Magdeburg, 1898.
45 Schroeder: Arch. d. Ophth., 1894, abstract of paper.
46 Schweigger: Arch. d. Ophth., 1893, abstract of papers at Heidelberg Congress.
47 Stadfeldt: Klin. Monatsbl. f. Augenhkde., March, 1896.
48 Stricker: "The Crystalline Lens System. 1899.
49 Vacher: Soc. Franc. d' Ophth., May, 1896.
50 Valude: Arch. d' Ophth., 1892, abstract of paper at Paris Ophth. Soc.
51 Volker: Physiol. Verein in Kiel, Nov. 29, 1897; Munch. Med. Woch., 14, 1898.
52 Weiland: "What Amount of Axial Myopia Theoretically Produces Emmetropia of Distance after Removal of the Crystalline?" Annals Ophth., April, 1899.
53 Wood, Casey A.: Am. Jour. Ophth., p. 360, Vol. vii, 1890.
54 Wray: Trans. Ophth. Soc., 1895.
55 Wurdemann, H. V. and Murray, W. R.: "The Surgical Treatment of High Myopia"; Annals of Ophth., April, 1899.
56 Zimmerman: "Personal Communication," Jan. 30, 1897.

VERY HIGH ASTIGMATISM.*

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The purpose of this paper is to put on record a case of a rather uncommon but striking anomaly occasionally encountered in the refraction of the eye.

Since the subject of astigmatism has been brought into the domain of scientific and practical study, the principal questions referring to it, which have come under discussion, have related to its seat, frequency, variety, cause, effects on the visual acuity and comfort of seeing, the health of the eye and on the functions and disturbances of distant organs. Statistics bearing on the relative frequency of the different forms of astigmatism compared with one another and the refraction in general, are at hand, while the very highest forms have apparently not received the same attention. The trial cases appear to place the limit at 6 or 7 D.

The reason for this is obvious; astigmatism can only be adequately studied by the aid of reliable objective methods, and until such had been brought to such a degree of perfection as to be capable of the accurate determination of the direction of the principal meridians and the quantitative measurement of their refraction, the subject had remained one of uncertainty and surmise. Not only so, but the accumulation of statistics, which can only result from the published report of cases of individual observers, required time. We find, accordingly, that Donders makes the statement that at the time of the publication of his work, it was not yet possible to determine the limits of astigmatism; he recognized an error of 1-95 in one of his own eyes, and suggests that this may be an approximation to the limit on the side of the minimum while he was not prepared to fix a maximum, citing a case observed by himself in this direction of 1/5=8 D.

The scantiness of statistics and even of reports of individual cases appears to be rather striking, even at the present time. Thus, Galezowsky has reported three cases of astigmatism of from 12 to 15 D., which he appears to consider as well nigh unique—and even these seem to have belonged more properly under the rubric of conical cornea. He describes a conical lens with spherical and cylindrical surfaces, which he employed with satisfaction and recommended in similar ones. Fukala, the promoter of the operative treatment of high myopia, thinks that just as patients are unable to wear the strong spherical lenses, so high cylinders can not be borne.

As a matter of fact, instances of strong cylinders worn with comfort have been reported from time to time. No doubt many here present have personal knowledge of the beneficial effects of such lenses.

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*Presented to the Section on Ophthalmology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

The question of the highest forms of astigmatism reduces itself, after all, to a study of the optical conditions of so-called irregular astigmatism and conical cornea. It is well known that high degrees of corneal astigmatism result from operations—sections. An instance of 26 D. has been reported by Dr. Edward Jackson. Such astigmatism undergoes very considerable modification in the course of time, at first rapidly, afterward more slowly, so that an astigmatism of 10 D. or more may diminish to 2 or 3 or perhaps disappear entirely in the course of a few weeks or months.

When the presence of irregular astigmatism has been established by one of the usual methods for the discovery of this anomaly, for example, Placedo's disc, which, of course, exhibits only corneal irregularity, the usual seat, however, the duty of the oculist is by no means accomplished. The means at our command for the study of such cases, besides the subjective method, are the ophthalmoscope, ophthalmometer, and the shadow test. When it is possible to obtain anything like a satisfactory view of the shape of the disc, even where the details can not be seen satisfactorily, the changes in the direction assumed by the principal axes of the elliptical nerve head, according as it is viewed in the direct and indirect images, will sometimes furnish a valuable clue to the direction of the axes and a surmise as to the amount of any element of regularity that may be present; the ophthalmometer may render similar service and more accurately indicate the amount of difference between the principal meridians; and skiascopy will give these indications, if present, with considerable certainty; in the midst of the broken reflex, the principal axes will be indicated, so to speak, by the general trend of the light, even if a distinct band is not present. Subjective examination is generally unsatisfactory if used alone. With the clues given by the objective findings, it may sometimes supplement the former with advantage, the general directions of the principal meridians once known.

Even cases of what are ordinarily considered as instances of rather high regular astigmatism, say from 3 to 6 D., are frequently accompanied by irregular astigmatism. Meridional astigmatism corresponding to spherical aberration of ordinary lenses—positive, if the peripheral portion of the pupil has the stronger refraction; negative, if the center is the more refractive; and the so-called "scissors movement,"—are often marked accompaniments of astigmatic eyes and a source of embarrassment in determining just what portion of the pupil is to be regarded as the visual zone and where the point of reversal for that zone is to be placed—circumstances too that frequently explain the uncertain and contradictory replies of the patient when under examination by the trial lenses, as well as certain statements and complaints in regard to the wearing of the glasses finally selected.

Very high astigmatism is, in fact, never purely regular—it is always accompanied by irregularity. The most important practical question in any case of marked irregularity is whether the refraction has a degree of regularity which is necessary to securing improvement. Painstaking examination will not infrequently accomplish this object after perhaps years of dissatisfaction and numerous disappointments on the part of the patient. To whatever degree the refracting optician may trench on the province of the oculist, we may be sure that cases of this nature will be left to the accomplished ophthalmologist to demonstrate his superiority over the spectacle vendor.

The argument for removal of the lens in high myopia is based largely on the alleged inability to wear the strong concave lenses required for its correction; it is evident that the disturbing defects of strong spherical lenses also inhere in strong cylinders; the latter possess additional inconveniences, as appear even in the weaker ones employed in daily practice. It must be admitted that such distortion will prove more or less annoying, but the question is not whether the full and entirely comfortable vision of the normal eye can be obtained, but whether the individual for whom no relief is possible in any other manner can not be aided in a marked degree; it is hardly necessary to refer to the operations which have been suggested on the cornea or iris, or to the conical or parabolic lenses which have been proposed for irregular astigmatism, but which have not made, and are not likely to make, their way.

These cases of high astigmatism resemble the ordinary form, in that they are congenital or, at least, usually acquired in early life, and hence come under notice in youthful individuals more capable of adapting themselves to their glasses, unlike the usual subjects of post-operative astigmatism. The amount of improvement which the correction of such errors is capable of effecting is not to be judged by any absolute standard. A glass which raises the visual acuity from, say 15/100 to 15/40 or only 15/70, may give greater benefit and satisfaction than, for example, increasing the vision from 15/30 to 15/10 in a case of myopia. Whatever improvement is effected is available for vision at all distances, both far and near, aided, if required, by the patient's age, by the requisite presbyopic correction.

As an instance of high astigmatism, I beg to report the following case:

E. L. S., aged 32, American, has always been healthy, and free from known disease of the eyes. He was first examined by me four years ago. The history he gave of his visual troubles is characteristic; he believed himself to be near-sighted all his life, but "not like other near-sighted people," seeing about equally badly for far and near, for, while he habitually held near objects very close to his eyes, like a high myope, he is unable even then to obtain satisfactory sight, e. g., he could not read the larger newspaper type; at the same time distant vision was not nearly so poor as was to have been anticipated from his manner of holding near work.

Quantitative examination gave the following results:

R.=12/100. L.=12/100.

Reads the 2 m. near type at about two inches from the eyes.

He was employed as a general utility man about a country establishment, the only kind of work his impaired vision enabled him to perform. He did not complain of pain in the head nor eyes, nor of any symptoms of asthenopia. His parents and subsequently he himself had consulted opticians and oculists with a view to securing improvement by glasses, if possible. He was informed that he was near and "weak" sighted; the glasses he received gave little or no improvement.

When I saw him he was wearing:

+2 cyl., ax. 90 R. and L.

Externally the eyes presented nothing noteworthy, with the possible exception of rather large pupils, which, however, reacted to light and convergence; the external muscles were in good balance—slight exophoria was present—the media were clear; the details of the fundus could not be distinctly seen with any spherical lens. It was evident that myopic astigmatism was a dominant factor in the refraction, but there was evidently a high degree of irregularity also present. The shadow test showed that this was the case, and in the midst of the broken and irregular reflex a zone came out distinctly, showing the bands and movements of mixed astigmatism as follows:

R.=+2 =—20 cyl., ax. 15°.

L.=+2 =—20 cyl., ax. 178°.

With these lenses his vision was:

R.=12/30. L.=12/40

with near vision to correspond. This correction was prescribed and he has worn it constantly with comfort and satisfaction. With the correction before the eyes the fundi were seen quite

clearly; nothing of special interest was noted, beyond a rather extensive circular area of choroidal atrophy around the disc, extending somewhat irregularly outward. The measurement was made under homatropin mydriasis.

I have examined the man several times at intervals of about a year since giving him his correction, but have detected no material change in his refraction. He has worn the original lenses constantly since they were first prescribed.

DISCUSSION ON PAPERS OF DRS. RISLEY, JACKSON, CLARK, WÜRDEMANN AND SCHNEIDEMAN.*

DR. W. H. WILDER, Chicago—In regard to the peculiar asthenopia that occurs in certain of these cases of anisometropia, and also in certain cases of astigmatism I wish to note that in some of them there is observed a peculiar and interesting change in the retina. Unfortunately, I did not arrive in time to hear all of Dr. Risley's paper and I dare say he alluded to this condition. My attention was first called to the changes in the neighborhood of the yellow spot, by Mr. Nettleship, and in some of them you will find, by very careful focusing, a peculiar granular change about the macula lutea, with possibly some degre of congestion of the vessels to the temporal side of the disc. It would seem, in some cases, almost as if a coat was forming. It is not sufficient to be called a granular appearance, but is rather a pepper and salt appearance, and it may be found in some where the astigmatism is so low as to be supposed not to be a prominent and active factor in the case. As far as my experience with anisometropia is concerned. I have observed, in quite a number, that if the patient has courage enough he will be able to wear a full correcting glass and overcome the difficulties that Dr. Jackson mentioned, such as seeing things distorted, "walking up hill," etc. I had a man under observation at one time, to whom I gave a full correction of a high degree of astigmatism, and he came back saying he had to hold on to the rail of the bridge as he attempted to cross the Chicago River, because everything seemed to rise up at an angle of 45 degrees. If the atropin mydriasis be kept up for a considerable time, or if the patient persist he can adapt himself to the new relations.

As for high degrees of myopia, I have been surprised at the small opportunities I have had of observing cases suitable for this operation. I have a large clinical experience and have had for perhaps eight or ten years, and yet I have seen but few cases, perhaps eight or ten, that would have been suitable for the operation. The dangers seems to overbalance the advantages, and I doubt if it has as large a field of usefulness as has been supposed.

DR. F. T. ROGERS, Providence, R. I.—I wish to emphasize but one point in Dr. Jackson's paper, and that is the plea for an attempt to correct these high degrees of anisometropia. If one seek for information in the text-books he will find it stated that these cases are not susceptible of relief by glasses. Landolt says that in the vast majority of cases our results will be nothing. It seems to me that if a man has a correct understanding of the laws governing these cases, and a knowledge of the relation between convergence and accommodation, he is not doing his whole duty by the patient without at least making an attempt to correct these errors. As Dr. Jackson said, frequent trials may have to be made before a successful result is obtained. If we tell the patient that he has a bad eye and no glass can be worn with comfort he will likely go elsewhere to seek a glass that does give relief. I can recall numerous cases seen within the last nine years, where great comfort has been derived from wearing glasses of great difference. In one case there was a —2 cylinder in the horizontal meridian of one eye and +5 cylinder vertical in the other. This man had been arrested on the street several times on the charge of drunkenness, because he was unable to walk steadily. By wearing his glasses he could walk with perfect steadiness. In another case, a child of 12 years had worn, for two years, a +2 for one and +12 for the other, and my experience has taught me that children do not wear glasses by preference, and if they keep them on it is because they give comfort. I wish simply to emphasize the point that each case should be a law unto itself, and we do a wrong to our patients and an injustice to ourselves if we allow them to go without an attempt to correct such errors.

DR. GEORGE M. GOULD, Philadelphia—I wish simply to give a word of commendation to what Dr. Rogers has said, and to add that there is nothing more atrocious than the advice given in the text-books, that corresponds to the reference quoted from Landolt. Every case of anisometropia may be corrected; I do not think I have ever yet failed to secure glasses in such cases that were satisfactory and that made both eyes participate in vision. The question goes back not only to the first effect of the glasses, but to several apparently minor and yet really major considerations. In many cases of anisometropia one will need to modify the single eye correction by the findings made with both eyes open. It is a strange fact that a highly amblyopic eye, even with both eyes fixing, will detect a slight turn or change in the axis in an astigmatic glass. By testing the axis of the amblyopic eye while both eyes are functional, one will find that the bad eye detects almost any inaccuracy of axis or strength of lens at once. By this means, slight changes may be required from what one has found by examining each eye alone, and in this way one may avoid some of these distortions complained of. I remember one patient who was greatly tormented by the distortion of objects with the best glasses I could give him. With both eyes open I twisted one axis a little and immediately the objects straightened up. A considerable help may be gained by the use of this method. Indeed, I am not sure that all tests may not be more accurately made with both eyes uncovered.

The very best prescription, moreover, filled by the best optician, may not correct the astigmatic error when mounted in the spectacle frames. I instruct all my opticians to fit glasses perfectly, and then to try them in place by merely twisting each lens separately, a little upward or downward, to see if there is any improvement by a slight change of axis. Another point is the closeness of the glass to the eye. In these cases with distortion I have secured good results by trimming the lashes and setting the glasses as close to the cornea as possible.

DR. G. C. SAVAGE, Nashville, Tenn.—More than ten years ago my friend, Dr. Lippincott, first pointed out the distortion of retinal images. A little later on I published an article, thinking I was the first to point this out, but, in spite of the fact that Dr. Lippincott explained it so clearly in 1889, at the meeting in San Francisco it was almost the unanimous opinion that there was no distortion of images in oblique astigmatism. The question of anisometropia so far as oblique astigmatism is concerned is one easy to master. There is now no question, in the first place, but that there is a distortion and there is a definite strain that falls largely on the oblique muscles. Astigmatism unequal and oblique, ought to be corrected, but it should be done in a way attended by the most comfort to the patient, and you ought to tell him beforehand the experiences through which he must pass. It is to the credit of Lippincott that he devised the means of carrying the patient through those troublous times, that is, to give a part correction to-day and in a month or so make a change, until you gradually arrive at a full correction. The patients bear the slight change very nicely and, step by step, one gets the patient up to full correction without much annoyance.

Another method of doing this is a method which I take credit for myself, that is, by slightly turning the axis of the cylinders in the proper direction, which can easily be determined, so as to partly straighten the images and at intervals returning it to the right point until the vision is gradually freed from the distortions. It is the power of every man to tell the patient beforehand just what discomfort he will have. If he has an oblique astigmatism with the axis diverging above, we know that the patient is going to have to "climb hills," and to see the wall leaning from him at the top, and we know that when he takes a book in his hand it will appear broader at the bottom than at the top, and further we can say to that patient that in a short while, within a week, all the trouble will pass away. Suppose the meridians converge above, you give the full correction and the patient has the opposite condition of things—the wall will lean toward him at the top, and the top of the book will appear broader than the bottom. You must say then that it will require some time to get accustomed to lenses and that he will probably not get over the distortion in a month or two unless you adopt the plan suggested by Lippincott, or rotate the cylinders as I have suggested.

DR. A. A. HUBBELL, Buffalo, N. Y.—I have been deeply interested in Dr. Jackson's paper, and in the main I agree with him; but for many years I have corrected anisometropia with greater successes in young people and the younger the patient the more readily would a full correction be accepted. The consciousness of the individual is such that as years go on it does not yield readily to a change; it has become accustomed to certain retinal impressions and, when a change in them is produced in a person past 40 or 50 years of age, that person will, many times, repel any effort we may make to equalize the visual acuteness in both eyes. We can, therefore, with greater confidence correct anisometropia in the young than in older persons.

In regard to the distortion of images, Dr. Savage is, in the main, correct; but I do not believe that he is correct in at-

* The papers of Drs. Jackson and Clark appeared in the JOURNAL of December 2. An abstract of Dr. Risley's paper, which was published elsewhere in full, was printed in the JOURNAL of October 7, ¶ 69, p. 904.

tributing all of the metamorphosis to the action of the oblique muscles. The shape of the retinal image is changed when cylinders are placed before the eye, but such change can not possibly be produced by the action of the oblique muscles. Cylinders may be gradually increased in strength until the desired correction is reached, as Dr. Lippincott and Dr. Savage suggest, but the consciousness must be educated, so to speak, to the new impressions.

With regard to astigmatism after cataract operations, we all believe that the astigmatism is produced by the sliding of the flap; most of us are doing the flap operation, and, therefore, get astigmatism against the rule. I have in some instances attempted to avoid this sliding by using a narrow Graefe knife and making a shoulder for the flap by turning the knife a little forward as I finish the section. I have found that this lessens the amount of astigmatism. One of the main factors in the production of astigmatism is the pressure exerted on the eyeball, either by the dressings or by contraction of the orbicular muscle, and this should be avoided as much as possible. Furthermore, if the cut heals rapidly, we do not get as much sliding as when it heals slowly.

DR. A. B. HALE, Chicago—What appendicitis is to the surgeon, myopia must be to the ophthalmologist. We Americans do not have the opportunity the Germans have to study this condition, and even they are not by any means decided as to the best way to treat myopia. Perhaps I see more cases of myopia than most of you, because my clientélle is composed largely of Russian Jews, and I am therefore particularly interested in its treatment. I have operated in half a dozen cases, and while that is not many, it teaches me some points. I have been able to answer some questions which I had considered before I tried to operate. The first is, what to do after discision. Shall one wait for absorption to take place, repeating the discis sion from time to time, or shall the cortical matter be released as soon as the eye is quiet? In one case I allowed absorption to go on to completion, but, though the results were very good, they were not satisfactory to me because the patient had to remain in the hospial for a long time and there was considerable irritation. I see no reason why the lens should not be removed as soon as the first irritation is over.

The second question was what to do when I did get an irritative process. I shall hereafter always do an iridectomy. In one case I did not. The eye was quiet for a few days, then the old disturbance came back, after relieving the lens matter, and the man's vision was not any better after the operation than before.

The third question concerns the disposition of the capsule. I have found that it is not the same capsule that one meets with after a cataract operation. I have not answered that question yet.

In cases of anisometropia I have a series of fifty cases that I am studying by the stereoscope, and I find that practice with it gives good results, satisfactory both to the patient and to the physician. Asking Dr. Savage's pardon, I want to say that the question of oblique astigmatism and anisometropia are two different questions and can not be discussed in the same way.

In regard to the operative treatment of astigmatism I wish to call attention to an article by Mr. Carter. He made an incision in the faulty meridian and reduced the astigmatism from 5 D. to .5 D.

DR. E. J. BERNSTEIN, Baltimore, Md.—I am glad to find such a universal approval of a method I have been advocating ever since I began to practice, that is, the giving of full correction, but doing it gradually. It struck me that it was the only rational thing to do, and I have had nearly all my patients finally accept the full correction. I have had a number of patients consult me regarding their sight in supposed amblyopic eyes. Several were adults who had never made use of the one eye and had been told, by reputable oculists that nothing could be done for that eye. Yet by proper correction of their *static* or total refraction, and by gradually conducting them up to the acceptance of such glasses, I have brought about binocular vision and normal vision in such bad eyes. There was only one case in which I made a failure, and that was where, in an unguarded moment, I told the patient that I had given him a partial correction and that after he had worn it for a month or two I would make a change. He insisted that he could stand it at once, and I had to give it to him, with the result that he soon rejected the glasses. I have made my patients use a stereoscope, as recommended by Landolt of Paris, when they have any degree of anisometropia.

DR. J. A. LIPPINCOTT, Pittsburg, Pa.—Dr. Jackson has covered the ground so well, as in fact he uniformly does, that I find it necessary to refer only to the principal points he spoke of, one of which is the division into two instead of three classes on the ground that cases in which the vision is suppressed in *one eye* do not come under the category of anisometropia. In regard to the practical points he made, I agree with him in the main. The fact is that the subject is such a large one that it is difficult to decide where to begin. If I had time I would like to speak of the general subject of stereoscopic vision, especially with regard to some facts which are detailed in a paper I published ten years ago. However, I will content myself with emphasizing one point, that is, that metamorphopsia is produced not only by cylindrical but also by spherical lenses, for it depends on the difference in the images and the convergence of the optic axes. As to the leaning of the axes when the two eyes are tested together, there is no doubt they should be so tested, but my experience is that the axis very rarely varies in binocular vision from the position it occupies in single vision. To change the axis simply to do away with the metamorphopsia is wrong in principle and bad in practice. We should instruct the patient to persist in wearing his glasses, assuring him that the distortion of images will gradually disappear.

DR. LEARTUS CONNOR, Detroit, Mich.—One point has not been mentioned, yet I have no doubt all the gentlemen make use of it, viz., when the patient is going through this difficult experience send him off on a hunting or pleasure trip and when he comes back he will use the glasses. Dr. Risley's paper showing that the proper correction of the refractive error resulted in the removal of all the muscular error is important. All of us have seen operations done early in such cases, and afterward such steps had to be retraced. I can see that in an eye that was very defective its correction would help the other eye. That has been my observation and I have found it of great practical value to correct that as well as the better seeing one. One other point he made in connection with the work on very young children is extremely important. I am sure those of you who have watched such work have seen the eyes grow better and at times become nearly emmetropic. Too much emphasis can not be placed on the importance of this fact to the welfare of future generations.

DR. FRANK ALLPORT, Chicago—Several have spoken of the weight of the heavy lenses, and I desire to remind the Section of a useful device in the little films that the opticians call lenticulars, similar to what we see in the binoculars, except that they are round and are simply stuck on the center of a plane glass.

I am sure that I have the profoundest respect for anything Dr. Gould may say and I do not speak in a spirit of criticism about his method of changing the axis of the glass when examining with both eyes open, but I can not see why this should be done. The axis of the astigmatism must be the same whether one eye is open or both and as Dr. Gould will not have the opportunity to answer my question I hope Dr. Jackson, in closing the discussion, will explain it. I have no doubt it is true, if Dr. Gould says so, but I want to know why.

Our Philadelphia friends are expert refractionists but I can not quite get up to their exactitude in the full corecction of hypermetropia, neither can I quite bring myself to the point of fully correcting these cases of anisometropia. I approach it as nearly as possible, but find myself unable as a rule to correct both eyes fully and give glasses that are satisfactory to the patient, and of course that is what we have to aim at. The same may be said of very high degrees of myopia.

DR. YOUNG—In speaking of post-operative astigmatism last year, at Denver, I called attention to some observations I had made to this effect, that in examining patients with incipient cataract I had been surprised at the number of cases of astigmatism against the rule which I had observed, and the question occurred to me whether astigmatism against the rule predisposed to cataract or whether it was a part of the cataractous process already begun. It may be that that would have some bearing on post-operative astigmatism. The highest degree I have had is 7 D., and in that case I secured 20/20 vision and Jaeger No. 1.

DR. L. J. LAUTENBACH, Philadelphia—The discussion seems to indicate the need of carefully studying the curvatures of the cornea by means of the ophthalmometer. In Dr. Risley's first case he absolutely proves that he was, by means of mydriatics, able to bring about results that other men are endeavoring to perform by means that must always fail; I do not think that a muscle operation would avail in such a case. Changes of the cornea and in its curvatures do undoubtedly occur, and are due to the action of the muscles enclosing the ball, and the lids. The condition that predisposes to it is anything that interferes with the nutrition of the cornea. In a paper presented to the Section three or four years ago, these were the lines I laid down as governing the corneal curvatures. I take the ground that if these corneal curves are carefully studied and corrected, and if invariably the astigmatism is all

corrected, operations on the muscles will be very few indeed.

With reference to Dr. Schneidemann's paper, I recall a case in which an astigmatism of 10 D. was reduced to 4.5 D. By full correction you put the eye in such a condition that the reflexes are lessened and the nerve and blood supply are restored more nearly to their normal condition.

DR. MILLER—I was very much interested in what Dr. Risley had to say about correcting muscle balance by proper glasses. Dr. Payne wrote an article that has always been of great value to me in this connection. He would always keep the eyes under atropin until the muscles were thoroughly paralyzed and then, correcting all the errors possible, left the same amount of ametropia uncorrected in each eye, thus balancing the muscles. This has served me very well in all cases of ametropia.

DR. TENNEY—I recall a case of a woodturner who had four diopters of hypermetropia and one of hypermetropic astigmatism with the axis vertical. He came back to me in a few days, saying that the wood he turned did not seem round, and yet he knew it was impossible to turn it without its being round; everything that was round looked oblong to him. This distortion was produced by the cylinder and in about ten days it disappeared.

DR. S. D. RISLEY, Philadelphia—The papers presented in this symposium by my colleagues, and the remarks made in the discussion, have been so rich in suggestion that there is much difficulty in selecting points for special notice in closing. The statistics presented in Dr. Clark's paper are of great interest and importance as suggesting the need for an improved technic in the operation for the extraction of cataract and in the subsequent treatment. If the ultimate result can be modified or rendered less satisfactory, as measured by the acuity of vision through faulty technic even in successful cases, it should lead to a careful scrutiny of our methods. The grade of corneal astigmatism noted in the paper in Dr. Clark's experience, corresponds very closely with my own. It depends largely on the kind of section made in the cornea, and on the process of healing; tardy closing of the wound favoring the occurrence of high grades of astigmatism. Irregular or ragged sections of the cornea lead also to astigmatism, since such wounds do not permit the accurate coaptation of the edges of the wound. I believe that the section suggested by Mr. Teale, and described by Dr. Hubbell, should be placed in the category of irregular wounds, since the shoulder produced by turning the edge of the knife forward in completing the section rather favors the riding up of the anterior lip of the wound. Such a section must be made with a narrow knife, and perfectly smooth incisions can not be so readily made with such an instrument. I prefer a rather broad knife with which the section is made in the same plane from start to finish, in the limbus, and completed by making a small conjunctival flap. Such a wound shows no tendency to gap, and the conjunctival flap favors the rapid healing of the wound and prevents a faulty coaptation of the edges.

I was interested in the statistics of myopia presented in Dr. Würdemann's paper. I have taken occasion in my work on school hygiene to formulate the percentage of myopic eyes to all cases of refraction applying for treatment in Philadelphia, during twenty years, from 1874 to 1894. During the first six years there were 28.43 per cent. of myopia. In the succeeding period this percentage gradually fell to 16 per cent. At the same time *the degree of myopia* also fell 50 per cent. in cases of 7 D. or more. Nothing could afford stronger evidence of the value of the treatment and correction of the errors of refraction than these figures. The importance of the results they portray is manifest when we consider the dangers which cluster around the high degrees of myopia.

Closely allied to these considerations are the inquiries which underlie the removal by absorption or by the extraction of the lens in high myopia, as presented in the very interesting paper by Dr. Timberman.[1] Notwithstanding the admirable result he has reported, this Section of the ASSOCIATION should hesitate before it lends its unqualified sanction to this operation. The extraction of the lens is indicated only in the higher grades of the disease. I say "disease," thoughtfully, for we should never forget that these stretching eyeballs are critically diseased organs. There is in these eyes always present a chronic, progressing choroiditis which has impaired the nutrition of the ball and has already produced degenerataion of the vitreous body, which is fluid and usually well filled with floating opacities. Surgical interference in such an organ can be undertaken only at great peril. I have had the opportunity of witnessing several most unfortunate results from attempts to remove the lens in high myopia, so that until a more extended experience has demonstrated its relative safety, this Section should withhold its unqualified approval. The case is somewhat different in the very rare instances of high congenital myopia. In the meantime, fortunately, our modern methods of treatment are diminishing the number of cases of so-called malignant myopia.

As to the interesting fact brought out by Dr. Gould, concerning the change in the direction of the cylinder axis on examination with both eyes fixing, and about which Dr. Allport asks for an explanation, while it may be accounted for in various ways I believe it is usually due to a faulty binocular balance. We must all have observed the wavering of the corneal meridians during examination with the ophthalmometer. This will often disappear promptly, or the direction of asymmetric meridians will be changed, if one eye is bandaged. I believe that this can be explained by the faulty attachment of the ocular muscles to the globe. For example, we can conceive of a vertically acting muscle being attached too far to the outer or inner side of the vertical meridian of the cornea, or that the internus is inserted too high or too low, a condition of affairs which must disturb the direction of the corneal meridians, and it is quite conceivable that with both eyes open they would assume that direction which experience had taught to be the least annoying for binocular vision, and which might be quite different from that assumed with one eye excluded from participation in the visual act.

DR. EDWARD JACKSON, Denver, Colo.—I only wish to take up two points; one is with reference to the distortion of the images in oblique astigmatism, or the same distortion in any astigmatism, for the distortion of the image is the same, except that in oblique astigmatism the direction of greatest distortion is such that it interferes with the vertical and horizontal lines that are more frequently the subject of our attention. There can be no doubt that this distortion does occur, especially if the astigmatism is situated in the cornea. The difference in the two curves of the cornea makes a difference in the position of the nodal points; that is we have a different nodal point for each principal meridian, and therefore one gives a larger image than the other. The correction of the astigmatism by a lens causes a much greater distortion in the other direction, because we have not only a difference in the curve but the lens is situated farther away from the nodal point and hence affects this more. The distortion produced by the cylindrical lens more than overbalances, and leaves a greater distortion than there was originally caused in the eye. But the amount of distortion is a very small matter; it is not the important factor in this trouble. The important feature is that an image is given to which the eye is not accustomed, and the eye must learn to see with this and the ability to learn is in inverse proportion to the patient's age.

The second point is that referred to by Dr. Gould, and for which Dr. Risley has already given a probable explanation. Another explanation occurs to me in this way: Put a convex lens at some distance from the eye and a concave one closer to the eye. You can thus double the size of the image for one eye, and still fuse the images of the two. I think perhaps we have in the disturbed shape of the image by the cylinder a very delicate test of the direction of the cylinder, but we can not use it until we have the two images to compare, when, by a slight twisting of the cylinder from its proper direction, it will be shown that the two eyes open can at once detect the change in shape of the images.

DR. C. F. CLARK, Columbus, Ohio—Dr. Hubbell spoke of pressure affecting the amount of astigmatism. My dressing for cataract cases has always consisted of gauze covered by cotton with strips of isinglass plaster and the Ring mask. The question of section is of great importance, and in my paper I have emphasized the point that we do not make our section to prevent astigmatism, but to avoid prolapse of the iris, which is more important. I have supposed that the nearer I approached the periphery, at the summit of the section, the greater the danger of prolapse, and I have adopted the plan of turning my knife forward when within 2 mm. of the superior border, so as to come out in a line perpendicular to the corneal surface.

DR. ANDREW TIMBERMAN, Columbus, Ohio—I have been very much interested in the position taken by the members of this Section on the question of the surgical treatment of high myopia, and rather surprised by the advice Dr. Risley gave us a few moments ago. If I had a case of progressive myopia that was doing badly in spite of my efforts to retard it by the usual means, I should desire the privilege of resorting to surgical procedures; if one or both of my own eyes were so affected, or the myopia so high that correcting lenses gave only very imperfect vision with troublesome asthenopia, I should want the operation done, and would be quite willing, in the light shed by a review of von Hippel's 114 cases, to take in exchange the probabilities of such a course for those of

[1] JOURNAL, November 4, p. 1128.

non-operative treatment. I think experience is teaching us that these eyes are in no greater danger than are those not so treated. If we take one thousand highly myopic eyes, just as many accidents may attend them as the same number operated on, provided the operations are done skillfully and with due regard to the proper technic.

If the eye shows irritation, a few days after discission has been made, and tension is increased, the lenticular masses should be removed, for they act as foreign bodies, and if large enough, hinder drainage from the anterior chamber. Their removal is therefore the proper thing to prevent simple glaucoma. The increase in visual acuity is due not alone to the increased size of the retinal images, but as well to the fact that these eyes, being amblyopic, have not developed their function, and with no lenses whatever they will become very much more useful. I saw Prof. v. Hippel operate on not a few cases, and never saw him do any iridectomy as part of the operation. One thing is determined, that the degre of myopia is not the crucial indication for the operation. The question is not merely one of sixteen or even twenty diopters of myopia, but rather whether such patients have progressive myopia, with troublesome asthenopia, and, even when glasses are worn, very poor vision.

DR. H. V. WÜRDEMANN, Milwaukee, Wis.—It is generally recognized that those cases of anisometropia on which experts have worked and failed have occurred in persons mentally exhausted or the subjects of nervous imbalance. The brain cells certainly learn to fuse images of different sizes, shapes and even different positions in the binocular field, especially in the young. I have within the last few years been observing a child with traumatic cataract, where I needled the lens after the blind eye had diverged. After the operation had been completed and the sight restored, there was diplopia, which was extremely annoying, accompanied by vertigo. I performed advancement and tenotomy, with the result that the more nearly normal eye, having a refraction of +1.25, and hyperopia of the other eye of more than 11 D., gave binocular vision.

We Americans certainly measure the refraction of the eye more closely, and have done more toward the study of it, than those abroad. It is not alone the opticians that are deficient; the fault often lies in the prescriptions themselves. Look at the record of von Hippel's cases; high myopia—any amount of it, but no mention of the astigmatism that certainly must have been present in many of those cases. As regards the removal of the lens for high myopia, it must be rare. The best results are obtained by removal of the cortex shortly after the discission. It is not necessary to do an iridectomy, and all those who have had much experience advise against it. There are many dangers connected with this operation; we may have less experience than the operators abroad yet we must consider that of those cases reported they have had 2.2 per cent. of loss by infection and 3.3 per cent. by detachment; but it is true that in cases of high myopia, 12 D. or more, there is nevertheless a loss of about 5 per cent. by detachment.

Therapeutics.

Treatment of Influenza.

Such an authority as Dr. J. F. Goodhart says, in Clifford Allbutt's "System of Medicine," that there is no specific yet at hand for this disease. This is quite certain from the number of drugs that have been regarded as almost infallible by one observer and another. All are agreed, however, that mildness of attack and speedy recovery are best insured by taking at once to bed, and that it is the worst folly to struggle on with work and to attempt to fight the disease—a plan that, although some came through successfully, was nevertheless the cause of the loss of many lives.

To go to bed, to take plenty of light liquid nourishment and some liquor ammoniæ acetatis every few hours, was sufficient in most cases to induce a quick recovery. Other remedies largely in request were salicylate of soda in ten-grain doses every three or four hours, antipyrin, alone or combined with the former, phenacetin and quinin. Upon a review of the whole epidemic, there appears in these drugs nothing of a specific action and in the control that these drugs have over the temperature they were productive of relief, and made for the return of health. For the rest it is necessary to combat symptoms as may seem best: the cough perhaps most readily with opium in some form; the aches and pains perhaps in a similar manner; and for the lasting after-effects some of the many good nerve tonics, and the judicious use of alcohol, have been upon the whole the most successful.

We freely agree with Dr. Goodhart that there is no specific for influenza; there can be found throughout the extensive literature on the subject various prescriptions and valuable suggestions for treating the malady, cited by eminent authorities, to some of which the reader's attention is called.

Heming believes that salipyrin is the best remedy, and suggests the following formula:

℞. Salipyrin ..... ʒiss
Glycerin ..... ʒiiiss
Syrupi, rub. idæi ..... ʒi
Aquæ dest. ..... ʒiss
M. Sig. Shake well, and give a tablespoonful every fifteen or thirty minutes.

The catarrhal element of influenza is very constant, says J. E. Atkinson, in the "American Text-Book of Applied Therapeutics," and he adds: catarrh of the nasal, buccal, pharyngeal, and laryngeal mucous membranes in most cases requires no special attention. The supraorbital pain so often resulting from catarrh extending to the frontal sinus, it is said, may promptly be relieved by pencilling the nasal mucous membrane with a 5 or a 10 per cent. solution of cocain. For actual catarrhal pharyngitis, gargles, sprays, and washes containing borax, boric acid, potassium chlorate, etc., are more useful; for example:

℞. Acidi carbolici ..... gr. xii
Sodii boratis ..... ʒii
Sodii bicarbonatis ..... ʒi
Glycerini ..... ʒss
Aquæ rosæ, q.s., ad ..... ʒviii
M. Sig. Use as a gargle, spray, or wash.

The bronchial catarrh—which, however, may be absent—demands simple treatment medicinally. As a rule, cough-syrups are inadvisable, as they tend to nauseate and to increase anorexia. A simple syrup that may prove useful is the following:

℞. Morphinæ sulphatis ..... gr. ss
Syrupi scillæ ..... ʒii
Syrupi lactucarii ..... ʒss
Aquæ ..... ʒvi
M. Sig. A teaspoonful every second, third, or fourth hour.

If nausea be present and cough troublesome, but the bronchitis not severe, the following combination is often effective.

℞. Morphinæ sulphatis ..... gr. ss
Acidi hydrocyanici dil ..... m. viii
Spts. chloroformi ..... ʒiss
Aquæ menthæ virid. ad ..... ʒiss
M. Sig. A teaspoonful every third or fourth hour.

When bronchitis is pronounced, more stimulating agents will be required. Ammonium chlorid in varying combination will act with much advantage, thus:

℞. Ammonii chloridi ..... ʒi
Mist. glycyrrhizæ comp ..... ʒvi
M. Sig. A tablespoonful every third or fourth hour.

Counterirritation should always be practiced. Sinapisms applied over many areas are useful, but the best results are afforded by turpentin, applied as stupes, or warm on flannel. Blistering can hardly be required. In most cases of influenza the bronchitis is mild and does not involve the smallest bronchial tubes.

As the symptoms of influenza subside and the patient passes into convalescence, very deep depression and prostration of both body and mind, often persist for a long time. Vigorous tonic treatment, medicinal, hygienic, and moral, will then be required. Protracted abstention from business and a change of scene may be necessary, and complete restitution is often long deferred.

Wood and Fitz recommend the following to reduce the fever and bring about free perspiration:

℞. Antipyrin ..... gr. xv
Pilocarpinæ hydrochlor. ..... gr. ss
Tinct. aconiti ..... gtt. viii
Aquæ ..... ʒiss
M. Sig. One tablespoonful followed by a general hot bath or a foot-bath of ten minutes' duration, the patient being covered warmly in the bed; one dessertspoonful of hot toddy, repeated in

twenty minutes if sweating has not occurred. (The editor is of the opinion that the amount of pilocarpin here given is unsafe.) These gentlemen also recommend the following as a remedy in la grippe:

℞. Spiritus camphoræ.....ʒss
Olei caryophylli.....m. xxx
Chloroformi.....ʒiii
Tr. opii deod.....ʒii
Tr. capsici.....ʒii
M. Sig. Thirty to forty drops in water every hour or two.

In the gastrointestinal forms, very restricted diet (boiled milk), counterirritation over the abdomen (spice plaster):

℞. Sodii sulphitis.....ʒiv
Aquæ.....ʒvi
M. Sig. A teaspoonful in as much water every two hours till all pain is relieved and the patient is well.—*Monell.*

When the influenza is attended with mental and physical depressions:

℞. Spiritus camphoræ
Tinct. lavandulæ comp., āā.....ʒii
Spiritus chloroformi.....ʒi
Mucilag. tragacanth.....ʒi
Aquæ dest.....ʒiii
M. Sig. Tablespoonful every four hours.—*Devereaux.*

When muscular symptoms are pronounced Dr. B. M. Smith recommends:

℞. Sodii benzoatis.....ʒii
Salol.....ʒi
Phenacetin.....gr. xxxvi
M. ft. chart No. xii. Sig. One every four hours.

L. F. Donahue suggests for the several neuralgic and muscular pains, headache, etc.:

℞. Caffeinæ citratis.....gr. viii
Acetanilid
Lactopeptin, āā.....ʒi
M. et div. in chart. No. viii. Sig. One every three hours.

In pronounced catarrhal and inflammatory symptoms Huchard prescribes the following:

Pulv. ipecac et opii
Pulv. scillæ
Quininæ sulphatis, āā.....gr. xxx
M. For twenty powders. Sig. Four or five to be taken daily.

The following prescription was recommended by Morell MacKenzie:

℞. Potassii nitratis.....ʒi
Spt. etheris nitrosi.....ʒiv
Liq. ammon. acet.....ʒiss
Aquæ, q.s., ad.....ʒvi
M. Sig. One half ounce with one ounce of water every four hours.

Pepper was partial to the following prescription

℞. Quininæ sulphatis.....ʒi
Pulv. digitalis
Pulv. scillæ, āā.....gr. xx
Etracti opii.....gr. v
Extracti glycyrrhizæ, q. s.
M. et ft. pil. No. xxx. Sig. Take a pill four times daily.

H. C. Wood suggests the following in an uncomplicated case:

℞. Pilocarpinæ hydrochloratis.....gr. ss
Morphinæ sulphatis.....gr. 1/3
Aquæ.....ʒiii
M. Sig. ʒi every fifteen minutes till diaphoresis. Follow this treatment with quinin.

The editor is of the opinion that in nearly every case of influenza, strychnin in full doses should be given. Free elimination by the skin, kidneys and bowels is indicated, but tonic and supportive treatment should not be neglected. La grippe assumes so many phases that the treatment must necessarily be largely symptomatic.

Ipecac in Metrorrhagia.

The fact that small doses of ipecac have a favorable influence in arresting and preventing hemoptysis, induced Onimus to apply the same treatment to metrorrhagia, and he recently announced at the Paris Soc. de Biologie that he had found it remarkably effective.

Strong Sublimate Solutions in Treatment of the Eyes.

F. Guttmann writes to the *Deutsche Med. Woch.*, November 2, recommending the instillation once a day of six to ten drops of a 3 per 1000 solution of sublimate on the inferior conjunctiva and conjunctival fold, avoiding the cornea as much as possible, the eyeball turned up. His experience with several thousand cases thus treated at Magnus' clinic has established its great efficacy in catarrhus muco-purulentus with severe symptoms—the mild forms do not require such energetic treatment. It is also very effective in trachoma, but treatment must be continued longer than in case of catarrh, and simple trachoma does not need it. It cures chronic gonorrheal dacryocystitis without the necessity of a sound, except in extremely old cases. The instillations smart for an hour or so, but not seriously unless the nerve terminals are exposed. The more intense the catarrhal symptoms the less subjective reaction and the more brilliant the results. No indications of intoxication have been observed in any case and the immediate dilution of the solution by the secretions of the eye, precludes the possibility of intoxication. The solution must always be ordered *sine spiritu*, and the instillations made by a physician, in whose hands they will prove as "harmless as they are effective."

Naftalan on Burns.

J. Petrasko has occasion to treat severe burns every day in the foundries, etc., of Nadrag, and states that he has been testing naftalan on seventy patients, comparing it with others treated simultaneously with the usual remedies. The patient treated with iodoform writhed in pain all night; No. 2, treated with zinc bismuth salve, complained of severe pain, while No. 3, with naftalan, rested free from pain. Petrasko makes a preliminary communication to the *Deutsche Med. Woch.*, endorsing naftalan for burns from melted iron, steam, boiling varnish, etc., as the "best of all dressings." "Its superior pain-soothing power would alone ensure it a prominent place, but it also has the advantage of cleanliness and convenience, prompt and effective deodorizing properties, absence of all sticking of bandages, etc., and the formation of fine smooth scars." His patients now all clamor for the "black salve."

Fixation and Supporting Corset for Pulmonary Phthisis.

F. Zenker of Hamburg suggested a year ago the application of the same principles of immobility, extension and support which have proved so wonderfully successful in surgical tuberculosis, to the treatment of the pulmonary variety. He quotes the Italians who have reduced the mortality of surgical tuberculosis from 50 to 5 per cent. by their orthopedic achievements, and asserts in the *Deutsche Med. Woch.* of November 2, that his corset answers the same purpose and promises equally brilliant results. The corset is supported by the back and by side arm rests, built up on the large bones of the pelvis, not encircling the thorax. The pelvis, thorax and pectoral arch thus form a solid whole; the only motions possible are in the axis of the hip points. The lungs are sustained in the correct position, all excursions of the spine prevented, and the technical construction of the corset with steel splints or leather or celluloid over the cast, is extremely simple.

Circular Electrolysis for Strictures of the Urethra.

H. Bordier announced, at the French Association for the Advancement of Science, that his research in regard to the tertiary effects of electrolysis applied to strictures of the urethra has established that besides the eschar formation induced by the direct action of the current, any varying in intensity with the strength and length of application, the tissues beneath the eschar are profoundly influenced by the indirect effect of the current: the dissemination of sodium throughout the adjacent tissues. The superiority of this method of treatment, its durable results and the absence of recurrence, are undoubtedly owing to this tertiary effect of the circular electrolysis. It is a very slow process, hence Bordier recommends an interval of a month between the sessions. (*Rev. Med.*, November 15.) Other advantages are the absence of hemorrhage and phlegmons, and the fact that treatment does not interfere with the usual occupations.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of Obstetrics, November.

1.—*Rights of the Unborn: The Prevention of Conception. Edward J. Ill.
2.—*Present Position of Gall-Stone Surgery, with Report of Cases. William W. Seymour.
3.—*Ectopic Gestation: Shall the Case be Operated on at or Near Term, the Child Being Alive? L. H. Dunning.
4.—*Observations Respecting Symptoms and Treatment of Menopause. Augustus P. Clarke.
5.—*Hemorrhage and the Menopause. John Milton Duff.
6.—*Report of Four Additional Cases of Uterine Fibroids Complicating Pregnancy. M. Rosenwasser.
7.—*Two Cases of Dystocia Following Ventrofixation, One Requiring Cesarean Section. X. O. Werder.
8.—*Simple, Effective and Esthetic Operation for Shortening the Round Ligaments. H. W. Longyear.
9.—*Intestinal Adhesions in Suppurative Pelvic Disease; Their Significance after Vaginal Hystero-Salpingo-Oöphorectomy; with Report of Case of Ileus. F. Blume.
10.—*What Shall We Do With the Post-Operative Hemorrhage of Celiotomy? D. Tod Gilliam.
11.—*Three Rare Cases of Kidney Cysts J. F. Baldwin.
12.—*Retroperitoneal Tumors, with Report of Case and Presentation of Specimen. Rufus B. Hall.
13.—*One Form of Ovarian Disease Not Generally Recognized. Primary Sclerosis of the Ovary. William H. Humiston.
14.—*House-to-House Operating. Edwin Ricketts.
15.—*Hemostasis in the Tubo-Ovarian Pedicle. Thomas B. Eastman.
16.—*Technique of Abdominal Hysterectomy. J. H. Carstens.
17.— Postpartum Repair of Lacerations of the Cervix Uteri. Clinton Cushing.
18.—*Choice of Method for Total Hysterectomy, and Some Points of Technique. B. Sherwood-Dunn.
19.—*Treatment of Inertia and Subinvolution. Charles Stover.
20.—*Post-Operative Acute Toxic Hyperemia and Inflammation of Kidneys. F. F. Simpson.
21.— Suprapubic Cystotomy for the Removal of Large Encysted Calculus Containing a Hairpin. L. W. Swope.
22.— Abdominal versus Vaginal Section in the Treatment of Pelvic Disease. O. G. Pfaff.
23.— Nose a Factor in Post-Operative Disease. Report of Celiotomy followed by a Malignant Septicemia of Nasal Origin; Further Observations; Remarks. H. O. Pantzer.

Annals of Gynecology and Pediatry (N. Y.), November.

24.—*Study of 61 Cases of Appendicitis, 30 of Whom Were Operated On. Frank T. Meriwether.
25.—*Plea for Early Operation in Appendicitis. A. M. Haden.
26— Anatomic and Clinical Points in Ear of New-Born Infant. Arthur J. Shaw.
27.— Three Cases of Pneumonia with Marked Abdominal Symptoms in Children. John Lovett Morse.

Atlanta Journal-Record of Medicine, November.

28.— Report of Some Sarcomata of the Jaws. W. H. Hudson.
29.— Some of the Dangers of an Impure Meat and Milk Supply. W. H. Dalrymple.
30.— Advice to Gonorrheal Patients. W. L. Champion.
31.— General Consideration of Diseases of Ear, Nose and Throat. W. J. Cox.

Southern California Practitioner (Los Angeles), November.

32.— Opening Address. George E. Abbott.
33.— Some Features of the Bad-Nauheim Treatment No. 2. W. Jarvis Barlow.
34.—*Observations on Periodic Inebriety. P. C. Remondino.
35.—*Tuberculosis. Geo. L. Cole.

Inter-State Medical Journal (St. Louis, Mo.), November.

36.— Hepatic Complications of Typhoid Fever. R. B. H. Gradwohl.
37.— Otitis Media: Diagnosis and Treatment. M. A. Goldstein.
38.— Impotence. T. B. Busdraghi.
39.— Practice of Medicine in Porto Rico. John S. Browne.

Medical Herald (St. Joseph, Mo., November.

40.—*Ichthyol in Treatment of Corneal Ulcers. B. F. Travis.
41.— Localities of Continued Fever and Prevention. Frank Cordle.
42.— Case of Multiple Sclerosis and One of Cerebral Palsy in a Child. Frank P. Norbury.
43.—*Abdominal Surgery with Special Reference to Work in Private Homes. C. Hamilton.
44.— The San Luis Valley. W. J. Bell.

Post-Graduate (N. Y.), November.

45.—*Rheumatoid Arthritis and Treatment by Electrostatic Currents and Sparks. William B. Snow.
46.— Public Appropriations to Private Institutions Wholly or Partly Under Private Control. Frank Van Fleet.
47.— Rectal Diseases. Samuel G. Gant.

Cleveland Medical Gazette, October.

48.—*Semeiology of the Attitude and Motor State in Children. Samuel W. Kelley.
49.— Headaches of a Sympathetic or Reflex Origin. Edward S. Lauder.
50.— Case of Tetanus Treated by the Baccelli Method of Hypodermatic Injection of Carbolic Acid in 2 per cent. Solution. D. S. Hanson.

Bulletin of Johns Hopkins Hospital (Baltimore, Md.), October.

51.— Growth and Regeneration of the Tail of the Frog Larvæ. Ross G. Harrison.
52.—*Endocarditis Due to a Minute Organism, Probably the Bacillus Influenza. Mabel F. Austin.

Georgia Journal of Medicine and Surgery (Savannah), November.

53.— Advice to Gonorrheal Patients. W. L. Champion.
54.—*Asphyxia Neonatorum; Prognosis and Treatment. C. H. Richardson.
55.— Gangrene of Testicles and Scrotum, with Perforation of Urethra; Operation; Recovery; Hydatid Pregnancy. T. Catlett Gibson.
56.— Apthou's Tonsillitis, or "Diphtheroid Sore Throat." Mark H. O'Daniel.
57.— Cold in the Treatment of Pneumonia. J. D. Herrman.
58.— Troublesome Affections of the Feet. Marcus F. Carson.
59.—*Diagnosis of Typhoid Fever. William Osler.
60.—*New Portable Electric Outfit. G. M. Blech.

Richmond Journal of Practice, October.

61.—*Four Recent Cases of Gall-Stones, with Remarks. Hunter McGuire.
62.—*Examination of the Blood in Surgical Diseases. H. Stuart MacLean.

Therapeutic Gazette (Philadelphia), November 15.

63.—*On the Choice of Operation for Stone. John H. Brinton.
64.— What We Can Do For Cases of Squint. Edward Jackson.
65.—*Heroin in Cough. Chas. Herwisch.
66.— Some Therapeutic Measures Other than Medicaments. W. L. Johnson.
67.—*Some Clinical Experiments with Mercurol in Cases of Acute Gonorrhea. Frederick Fraley, Jr.
68.— Bilateral Chronic Intestinal Mastitis Cured by Operation. Edward Martin.

Occidental Medical Times (San Francisco, Cal.), November 15.

69.—*Collateral Considerations Relating to Appendicitis. Thomas W. Huntington.
70.— Preliminary Note on the Gastric Volumeter. Clarence Quinan.
71.—*Typhoid and Malarial Fever. Wm. Watt Kerr.
72.— Ligatures and Sutures, Their Preparation and Preference. Z. Taylor Malaby.
73.— Remarks on Clinical Picture and Its Relation to Post-Mortem Findings in Typhoid Fever. W. W. Cross.
74.— Treatment of Fractures Involving the Elbow-Joint. George H. Aiken.
75.— Report of Case of Agraphia. C. F. Griffin.

Annals of Ophthalmology, October.

76.—*An Analysis of Sixty-Three Eyes Affected with Chronic Glaucoma, with Special Reference to the Visual Field. G. E. de Schweinitz.
77.—*Nutrition of the Lens and Its Relation to Cataract Formation. Louis Stricker.
78.—*Excessive Myopia—Indications for Operation, and Results Which we may Reasonably Expect. Report of Case. Andrew Timberman.
79.—*Astigmatism After Cataract Extraction. C. F. Clark.
80.—*Case in Which Both Eyes Were Lost from Choroidal Hemorrhage Subsequent to Extraction of Senile Cataract. A. R. Baker.
81.— National Recognition of Eye Strain Reflexes. George M. Gould and Helen Murphy.
82.— The Dioptric Eye of Dr. Jackson. Carl Weiland.
83.— Misapprehensions Regarding the Dioptric Eye, and Its Uses. Edward Jackson.
84.— Use of Cocain in Measuring the Amount of Heterophoria. L. Guaita and L. Bardelli.

Merck's Archives (N. Y.), November.

85.—*Cause and Treatment of Typhoid Fever. J. T. Moore.
86.—*Poisoning by Sulphonal and Trional. Horatio C. Wood.
87.— Therapeutics in Continued Fevers. Samuel C. James.
88.— Clinical Use of Thyroid Extract. A. G. Servoss.
89.— Efficacy of Certain Remedies in Skin Diseases. C. H. Powell.

Medical Age (Detroit, Mich.), November 10.

90.—Concerning Malaria. W. Thornton Parker.
91.— Practical Points in the Treatment of Cystitis in Women. Charles Williams.

American Practitioner and News (Louisville, Ky.), October 15.

92.—*Cervical Tubular Adenitis. F. C. Simpson.
93.— Listerism and Bacteria. W. Symington Brown.

Boston Medical and Surgical Journal, November 30.

95.—*Three Cases of Pyloroplasty for Stricture of Pylorus. Maurice H. Richardson.
96.— Hospital for Chronic Disease. E. W. Taylor.
97.—*Nutritive Value of Albumose Peptone. A. E. Austin.
98.— Case of Osteomyelitis of Femur. A Case of Kocher's Operation for Radical Cure of Hernia. F. B. Lund.

New York Medical Journal, November 25.

99.— Experimental Researches on Effects of Different Anesthetics on the Kidneys. Robert Coleman Kemp.
100.—*Report of Cases of Sudden Death from Pulmonary Embolism Following Injuries or Operations in Pelvic Region. George P. Biggs.
101.—*Pregnancy Complicated by Uterine Fibroids. Henry C. Coe.
102.—*Pemphigus Chronicus Vulgaris of Larynx and Mouth. J. H. Bryan.
103.— Dry Heat of High Degree as a Therapeutic Agent. C. E. Skinner.
104.—*Plea for Further Use of Carbolic Acid. Frederick J. Adams.
105.— Dermatitis Following Use of Orthoform. G. E. Decker.

New York Medical Journal, December 2.

106.—*Notes upon X-Rays and Injuries of the Head. J. Rudis-Jicinsky.
107.—*Vaccination. F. G. Attwood.
108.—*Further Experimental Researches on Effects of Different Anesthetics on the Kidneys. Robert Coleman Kemp.
109.—*New York Academy of Medicine's Discussion on Anesthetics. W. H. Thomson.
110.— Case of Hysterical Larynx. F. E. Hopkins.
111.—*Recurrence of Tonsil after Excision. F. E. Hopkins.
112.— Dry Heat of High Degree as a Therapeutic Agent. C. E. Skinner.

Medical News (N. Y.), December 2.

112.—*Hemostatic Use of Gelatin: With Report of a Case of Hemophilia Treated by Gelatin: with Recovery. J. B. Nichols.
113.—*Microbes and Cold. Felix Vitale.
114.—*Examination of Blood in Surgical Diseases. H. Stuart MacLean.
114½.—Loss of Intestine: Effect on Nutrition. J. R. Johns.

Cincinnati Lancet-Clinic, December 2.

115.—*Causes and Management of Slow First Stages of Labor. Wm. Gillespie.

Maryland Medical Journal (Baltimore), December 2.

116.— Necessity of Post-Operative Treatment of Clubfoot. R. T. Taylor.
117.—*Medical and Chirurgical Faculty's Contribution to Welfare of the State. Eugene F. Cordell.

Medical Record (N. Y.), December 2.

118.—*Formative Period of Uterine Fibroids. Grace Peckham Murray.
119.—*Can We Diagnosticate Obliteration of the Receptaculus Chyli? Andrew H. Smith.
120.—*Cause and Treatment of Recurring Laryngeal Stenosis Following Intubation. Louis Fischer.
121.—*Two Cases of Graves' Disease Successfully Treated as Intestinal Auto-Intoxications. Charles L. Minor.

AMERICAN.

1.—See abstract in JOURNAL, October 14, p. 979.

2. **Gall-Stone Surgery.**—The summary of Seymour's paper is as follows: 1. We have in Tait's operation of simple cholecystotomy with drainage of the bladder, the really ideal operation for gall-stones in most cases, removing, as it does, the stones, and draining infected bile canals, and leaving no sutures as a nidus for another crop of stones, as Kehr and Homans have experienced. 2. In incision of the common and cystic ducts is the safest and most surgical means of removing stones in them. The question of sutures or drainage of the duct must be decided by the future. 3. In view of the splendid results of incision of the ducts for obstructing stones, excision of the gall-bladder may find a wider field than heretofore. 4. McBurney has shown that incision of the duodenum and either dilatation or incision of the common duct through this incision is, in skilled hands, both efficient and safe for the removal of stones low down in the common duct. 5. In neglected cases with dense and many adhesions and dilated stomach, an additional gastro-enterostomy or pyloroplasty will save cases that would otherwise die. 6. The mortality of the simple cases is practically *nil*. Even in his twenty-seven cases he had but two deaths directly connected with the operation. In one, the patient, treated for weeks for cancer of the stomach and intensely jaundiced, died the fifth day, of cholemia; and in the second the cause of death was a dilated stomach in which a gastro-enterostomy would have given a vastly better chance. A third was convalescent from operation when seized by a fatal attack of la grippe two weeks after operation.

3.—See abstract in JOURNAL, September 30, p. 861.

4. **Symptoms and Treatment of Menopause.**—Among the symptoms Clarke notes one, consisting of a marked exaltation of the faculties and exuberance of the imagination, which he considers as ominous. Undoubtedly the withdrawing of a large amount of blood from the sexual system causes a larger flow to the brain or central nerve organs, which may lead to undue strain and produce mischief. He also notices exceptions to Colles' law in which the mother showed syphilitic symptoms at the period of the menopause, which were quickly relieved by specific treatment. Other symptoms mentioned are the recurrence of hemorrhage after the period, which should arouse attention to the condition of the uterus; epistaxis; intestinal disorders; leucorrhea; mental irritability and hysteria; pleuritis and fibroid growths.

5.—See abstract in JOURNAL, October 21, p. 1043.
6.—Ibid.
7.—Ibid, October 7, p. 912.
8.—Ibid.
9.—Ibid, p. 913.
10.—Ibid, September 30, p. 862.
11.—Ibid, p. 860.
12.—Ibid, October 14, p. 980.
13.—Ibid, October 7, p. 913.
14.—Ibid, p. 912.

15. **Hemostasis in Tubo-Ovarian Pedicle.**—Eastman summarizes his paper as follows: 1. The silk suture is still used by many operators of ability. 2. A silk ligature of proper size has some advantages over catgut. 3. The silk ligature is the ligature for the beginner and infrequent operator. 4. Given an aseptic, strong catgut ligature it is perhaps the best for the skilled ligature tier. 5. The angiotribe represents a step in the right direction, but is not yet perfected. 6. The electro-hemostat lacks but little of being an ideal hemostatic, and should come into use in the treatment of tubo-ovarian pedicle.

16.—See abstract in JOURNAL, October 21, p. 1044.
18.—Ibid, p. 1045.
19.—Ibid, p. 1044.

20. **Post-Operative Acute Toxic Hyperemia and Inflammation of Kidney.**—After noticing the literature of the subject Simpson offers the following as a general summary of the results in the last thousand patients subjected to major operations in the gynecologic department of Mercy Hospital, Pittsburg: 1. Post-operative acute hyperemia of the kidneys and nephritis are conditions that often exist, but seldom give rise to serious symptoms or permanent lesion. They occasionally cause both. 2. They are due to predisposing causes plus exposure during and after operation, and toxic agents such as anesthetic, ptomains, leucomains, etc. 3. Anesthetics are undoubtedly irritating to diseased kidneys, but often the condition requiring operation is such as to render a moderate kidney lesion a secondary matter. A hyperemia of the kidneys, and even a nephritis, is often relieved by appropriate operation, notwithstanding the effects of the anesthetic. 4. Anesthetics are also irritating to healthy kidneys, but in the vast majority of cases this effect is only recognized by a systematic study of the urine before and after operation. 5. The bacterial poisons met with after operation are in themselves usually irritating to the kidneys, and when their effects follow immediately on congestion resulting from the anesthetic, impaired function results. The toxins, along with the effete products, are retained. 6. The retained poisons give rise to their own definite train of symptoms, which differ widely from those usually met with in the ordinary forms of nephritis, and hence the absence of edema, coma, convulsions, and other classic symptoms. 7. This condition is analogous—with important differences—to the nephritis of the acute infectious fevers, in which the symptoms of the original disease are decidedly intensified with but a slight kidney lesion. 8. The practical lessons to be drawn are: *a*. To see that the emunctories are acting normally and to use every effort to promote their continued activity. *b*. To prevent undue exposure. *c*. To use the smallest possible quantity of anesthetic. *d*. To be absolutely clean in technic. *e*. To recognize the condition at once and institute prompt and energetic treatment. 9. This condition has a significance of its own, because it occasionally causes serious symptoms, which may be averted or promptly relieved if it is recognized at once and appropriate treatment instituted.

24. **Appendicitis.**—Meriwether reports and tabulates 30 cases of appendicitis operated on, and besides these he has medically treated 31 others. Of the later, 4 died, or 13 per cent., and he thinks that more deaths would be found were the cases followed up. Of the cases operated on, 3 died, or 10 per cent., all 3 under unfavorable conditions. Of the 30 cases 16 were females and 14 males. The average age was 23.4 years, the youngest 5, the oldest 55. It was difficult to obtain any history of previous attacks. In 10 concretions were found. In all the McBurney incision was used, and in most the appendix was inverted and buried with a purse-string and reinforced by Lembert sutures. He advocates the operation, not only to save life, but also to prevent suffering and loss of time from business. With all his endeavor to adopt a conservative standpoint, he feels compelled to believe that the only remedy for the condition is in surgery.

25. **Appendicitis.**—Hayden, after reporting 3 cases to demonstrate the impossibility of determining the exact condition in all cases by the symptoms, urges the importance of early operation. He says: operate in all cases seen before perforation, however mild; in all cases seen after perforation, unless the symptoms lead to the belief that Nature has closed the leak or the patient is in such a state of collapse that he would be liable to succumb to the shock of the operation.

34. **Periodic Inebriety.**—From a study of many cases, Remondino concludes that periodic inebriety is a disease secondary to some physical or psychic defect, and that a radical change of occupation, climate or residence will often remove the cause and restore the patient to the normal condition. The

periodicity may at times be due to a diathetic condition analogous to that on which is grafted gout or rheumatism. Those that have hereditary tendencies are the worst and most unmanageable. In the majority of cases there is a tendency to self limitation of the disease at certain ages, it being worst during the period of greatest virility. Any physical condition that tends to disturb the nervous system may be injurious. When there is a sexual factor that affects celibates, marriage is beneficial. He says a racial proclivity exists to this form of disease among the blond races, due to ancestral habits, and he finds the variability of our American climate favorable to its development. He thinks that normal measures are useless with these cases when the environment is not changed. The disease is liable to end in habitual drunkenness. As regards treatment, occupations involving shock or strain should be avoided. The less exciting the life, the better. Malaria, bad air, irregularity of work or diet, or any blood deteriorating condition, overeating, constipation and so on, are all disastrous. For the above reasons, he says, bathing, exercise, regularity of work, added sleep, and for the bowels, a purge if depressed or feeling heavy, and a general strict observance of all hygienic laws are indispensable conditions to be observed by those who are disposed to the disorder under discussion. Emotional individuals should avoid any disturbances in their sentiments, as any access of grief or joy, etc. The victim of this diathetic disorder can not watch over himself too assiduously if he wishes to break up his predisposition.

35. **Tuberculosis.**—Cole discusses the spread of tuberculosis and its possible remedy. He does not believe in quarantine or notification, but thinks that individual instruction and organizations to spread information in regard to the disorder will be the right course.

40. **Ichthyol in Corneal Ulcer.**—Travis recommends the use of ichthyol for corneal ulcer, regardless of its cause. After operating with it in different strengths in a number of cases, he now uses a 30 per cent. solution, and weaker solutions for home use. It has no bad effects on healthy tissue, and while it is painful for about one minute this can be avoided to a great extent by the previous instillation of a 1 per cent. solution of holocain. He does not say that this is all that is to be done, but among all the local remedies it has given him the best results.

43.—See abstract in JOURNAL, December 2, ¶ 114, p. 1413.

45. **Electricity in Rheumatoid Arthritis.**—The statement by Osler, that no benefit can be expected from electricity in this disease, is contradicted by Snow, who advises the use of static electricity by sparks and a wave current. He reports eight cases, and summarizes the results of his treatment as follows: 1. The patient is always relieved by the first, and greatly relieved by the first few treatments. 2. If the case is not of too long standing, the joints are not only made freely movable, but straightened, and Heberden nodes removed. 3. After a daily treatment from seven to ten days, a constantly increasing interval may intervene without return of symptoms. 4. During the course of treatment no extension of the processes will take place. 5. We believe, though experience is not long enough to affirm, that in a large number of cases a complete cure will result.

48.—This paper appeared in the JOURNAL, October 7.

52. **Endocarditis.**—In this preliminary report Austin gives three cases of endocarditis in which a small bacillus, usually straight but sometimes curved, staining solidly and at the poles, and both free and in the protoplasm of the cells, was found. The cultures attempted were unsuccessful. The morphology of the bacilli, their staining reaction and the difficulty of culture agree with the influenza bacillus, and the excessive abundance with which they were found on the heart valves leaves no question as to their causal connection with the morbid condition. The lack of cultures, however, leaves one link absent in the chain of proof that they are identical with the Pfeiffer bacillus.

54. **Asphyxia Neonatorum.**—Noticing first the different forms of asphyxia of the new-born, congestive and anemic, and their special indications, Richardson describes his method of resuscitation. That which has given him most success is a modified form of those of Schultze and Dew. He has two vessels placed on the bed, containing one hot and the other cold water, and places the infant alternately in each, holding his thumbs on the thorax and his forefingers on the shoulders and arms, and as he presses the child downward into the vessel so as to throw the abdominal organs against the diaphragm, he presses with his thumbs upon the chest and raising the arms produces inspiration. Reversing the effort by placing the arms downward on a level with the body and slightly raising up the head, pressing also upon the sides of the thorax, he produces expiration. This is done while the child is in the water. The change of temperature itself produces a shock to the spinal accessory nerves which is transmitted to the medulla and respiratory center. He believes if this method was more generally practiced many lives would be saved.

59.—See abstract in JOURNAL, November 4, p. 1165.

60.—This paper was printed in the JOURNAL of February 25.

62. **Blood Examination in Surgical Disease.**—MacLean's paper, after noticing the microscopic examination of the red corpuscles and estimation of hemoglobin, as important in surgical conditions, especially as regards concealed hemorrhage, takes up the subject of leucocytosis, which is not confined to the inflamed area. Pathologic leucocytosis must be distinguished from digestive, which commences about an hour after eating, and that of pregnancy. It is well, therefore, to count the leucocytes before and after a meal. Physiologic leucocytosis is less marked than pathologic, rarely exceeding twelve or fourteen thousand. A few of the more prevalent and important diseases in which leucocytosis is found, are mentioned, such as abscess, appendicitis, pyosalpinx, osteomyelitis and shock. In tuberculosis, if uncomplicated, leucocytosis does not exist, and its absence here is diagnostic. Nervous shock is distinguished also by the absence of leucocytosis from that of hemorrhage. An important point is whether or not to use the transfusion. The paper is also noted in title 144.

63. **Choice of Operation for Stone.**—Brinton strongly favors the suprapubic method of operating for renal calculi, and states its advantages as follows: 1. The ease with which it can be performed. 2. Its thoroughness, affording as it does an easy extraction of calculus, and also the opportunity for full digital and ocular examination of the interior of the bladder. The encroachment on the bladder cavity of prostatic growths and other tumors can also be readily detected. If the operator so decides, these can be excised or removed. If a small calculus be hidden by a prostatic bar, or by any fold of mucous membrane, it can surely be felt and taken away. 3. In fact, the high lithotomy offers a great degree of thoroughness and operative certainty than any other method for the removal of stone from the bladder. 4. Good drainage can be effected if desired, an assured immunity from prostatic trouble can be obtained by keeping the cut opened and establishing an artificial urethra. 5. The constitutional involvement is but slight, and there is little danger of shock or septic poisoning, or other general accidents. 6. The convalescence is speedy and the after-cure satisfactory. 7. The operation is properly indicated at all ages of adult life and also, as shown by clinical experience, in boyhood before puberty. Perineal lithotomy is briefly noticed in conclusion, and he sums up with the following: "From the foregoing considerations it seems fair to conclude that litholapaxy is eminently the proper operation in the case of stone, either small, or soft or both; and where there is reason to believe that the bladder and associated urinary organs and prostate gland are not seriously diseased, and where, too, the general constitutional condition is fair. Where the contrary obtains, especially when the prostate gland is evidently largely involved in its middle lobe, and when the symptoms of urinary retention are marked by the presence of residual urine in greater or less quantities, the operation is not indicated. These symptoms, and particularly excessive vesical irritability and highly phosphatic and purulent urine, must lead one to suspect the presence of a small rough calculus concealed by an internal prostatic projection. In such cases it seems that the high operation is greatly to be preferred. And here it may be added that even in cases where litholapaxy seems proper, it is an operation for a trained and experienced specialist, rather than for the general surgeon. At all events the operator, whoever he may be, will do well to investigate for himself the mechanical conditions which accompany sudden bladder distension." He would thus decidedly limit the prac-

tice of litholapaxy, and turn rather to the suprapubic operation which will have a wider application in the future, far wider, perhaps, than in the past. It is, in fact, a procedure readily performed and devoid of great and sudden perils. As far as modern experience goes, it is free from that shock and that unexplained exhaustion which so often ambushes the operator by other methods. He has met with many who hesitate to adopt the suprapubic operation, but thinks this disinclination is a relic of the past. The suprapubic one is, he believes, the preferable, except for small and soft stones and under the circumstances above referred to.

65. **Heroin.**—Herwirsch reports a number of cases of cough, bronchial disease, phthisis, etc., in which he has given heroin with advantage. From these he deduces that the drug in the dose of from 1/12 to 1/6 grain three times a day is a very valuable addition to our remedies in acute and chronic bronchitis, and in the cough accompanying phthisis. It acts well in most cases; the number of respirations is diminished; no headache nor stomach disorders followed; except in one case he saw no tendency to constipate, and he saw no evidence of drug habits being established though he has given it for three months. The dose is much smaller than with either morphin or codein, and it is cheaper than the latter drug.

67. **Mercurol in Gonorrhea.**—After reporting 6 cases in detail, Fraley analyzes the result of the use of mercurol in 14; cured, 6 or 43 per cent., in less than four weeks; practically cured, 3 in three weeks; distinctly improved, 3 in sixteen days; only temporarily benefited, 2; discharge immediately stopped in forty-eight hours in 3; lessened considerably in 7. The best results were in cases of simple anterior urethritis and those of short duration, and also in those of very long duration where the disease had partially exhausted its virulence. He thinks that an unirritating remedy that has this record is one not to be despised.

69. **Appendicitis.**—Huntington became early impressed with the reasonableness of prompt operative interference in appendicitis and reports several cases observed and operated on by him. He states the following in conclusion: 1. Obscure gastric or enteric symptoms, such as habitual constipation and occasional abdominal pains, either localized or fugitive, should be given careful consideration before disease of the appendix can be excluded. 2. A diseased appendix is a serious menace to the patient aside from the possibility of ultimate explosion and infection. 3. Early operation in chronic appendicitis should be as strongly urged in the mild as in the more formidable cases. 4. Whenever the presence of adhesions has been detected during operation, thorough exploration of the general cavity should be made to avoid the necessity of a secondary operation for their relief.

71.—See abstract in JOURNAL, December 2, p. 1425.

76. **Chronic Glaucoma.**—De Schweinitz sums up the results of his studies of the 63 cases, in brief as follows: 1. While it is true that in typical cases of chronic glaucoma the nasal half of the field is earliest and most severely affected, this is by no means a constant occurence, for if an average field of a large number of measurements is constructed, there will result a map which indicates general restriction, rather than restriction in any one direction; in this respect the observations being in accord with those of Zentmayer and Posey. 2. The color field is often more contracted proportionately than the form field, and to attempt a differential diagnosis between simple atrophy and chronic glaucoma by an examination of the color field is not likely to lead to trustworthy results; an observation in accord with those of Zentmayer and Posey. 3. Scotomas are often found in cases of well-advanced chronic glaucoma, which may be ring-shaped, crescentic, paracentral or disseminated, and, moreover, these scotomas may be found by ordinary perimetric methods if care is taken to investigate each meridian and to use suitable test objects under varying degrees of illumination. 4. It is reasonable to assume, with Bjerrum, that the scotomatous defects are usually the result of the destruction of the fibers of the papilla at the margin or sides of the excavation, although it may be that some scotomas, especially ring-shaped ones, should be accounted for by changes in the inner retinal layers. 5. These scotomas are topographically different from those which occur in simple atrophy and may be utilized as a differential test between the two conditions, as Bjerrum has already pointed out. 6. It is evident that in many instances the scotomas are the forerunners of large defects in the visual field, the scotoma "breaking through" as it were, until the darkened area reaches the limit of the form field in the periphery. The cases are given in tabulated form and the symptoms and results stated briefly in the conclusion of the paper.

77.—This paper was printed in the JOURNAL of November 25.

78.—Ibid, November 4.

79.—Ibid, December 2.

80.—Ibid, November 18.

85. **Typhoid Fever.**—Typhoid fever is a self-limited disease, according to the author, and he thinks that its limitation is due to antitoxin produced in the intestines. He believes the toxins produced by the bacteria are largely absorbed by the intestinal canal, and he therefore uses intestinal antiseptics, which, while they do not kill the microbes, nor cure the disease, render both less virulent. Among the remedies thus used he mentions guaiacol carbonate, thymol, beta-naphthol, calomel and terebinthinates. He thinks most of the intestinal antipyretics are too depressing, and that we have all that is needed in external appliances, and the cold sponge bath is usually sufficient. He believes a bath-tub in some cases is slightly risky. In advanced cases with weak heart, strychnia is far better than alcohol, though both may be resorted to if necessary. An irregular heart needs digitalis. He believes in an absolutely liquid diet, and in convalescence starchy foods are to be the last allowed.

86. **Sulphonal and Trional.**—Acute poisoning by sulphonal is very rare, but the chronic form is too familiar and of late years cases of chronic trional poisoning have also been reported. Woods reports the symptoms of this condition, which in the case of sulphonal are very similar to those of the neurasthenic state, until the advanced stage, when colicky pains, absolute constipation, local paralysis and ataxia and hematoporphyrinuria appear. The symptoms of trional poisoning are similar, though there are some minor differences. The most important point in the treatment of poisoning from the disulphones is prophylaxis. When the condition has become established, it is serious. Out of 20 cases of sulphonal poisoning he has known, 17 died. An important precaution is to see that the poison is not allowed to accumulate in the body, and the interruption of the administration of the drug must be for at least a week and the intestinal canal be thoroughly cleared. The importance of this last can not be overestimated. After emptying the bowels, the most promising treatment is that of Mueller, who, noticing the acidity of the urine, administered alkalies, sodium bicarbonate, etc. Large amounts of water should be introduced into the circulation, both by the intestinal tract and hypodermically. The convalescence is apt to be slow.

92. **Cervical Tubercular Adenitis.**—Simpson's paper advises, in the treatment of tubercular cervical adenitis, a protective plaster, preferably one of belladonna, and mercurial ointment and avoidance of poulticing until pus is formed. It must not be forgotten that there is a tendency toward resolution in children more than in adults. We should see that the original cause is not maintained in the tonsils or nasopharynx. He does not believe in excision, and he thinks that with proper general treatment suppuration will rarely occur. Fresh air, sunshine, good ventilation are essential measures. Do not paint with tincture of iodin.

95. **Pyloroplasty.**—After discussing the general subject of stricture of the pylorus and calling attention to the importance of some of its causes, such as gastric ulcer, etc., and also to the diagnosis, Richardson reports three cases of pyloroplasty performed with the Heinecke-Mikulicz method, and discusses its advantages and disadvantages.

97. **Albumose Peptone.**—The nutritive value of albumose peptone has been tested on dogs, by Austin. He employed a solution containing 12 per cent. alcohol for preservative purposes, first determining its value in terms of nitrogen. In every 250 c.c. of fluid there were 3.85 grams of nitrogen in the form of albumose peptone entirely free from albumin. This would be equivalent to 118 grams of lean beef, or 24.06 of albumin. A dog weighing 10.88 kilograms was fed with 250 c.c. of this mixture daily, and regularly weighed and the urine and feces examined. At the end of six days it had lost

680 grams, though it was receiving more albumin in proportion to its weight than a man of average weight would receive with a mixed diet. The fact that the dog was compelled to supply the threefold function of food, viz.: repair of cells, production of muscular energy and maintenance of heat with albumin alone acccounts for the loss. The most remarkable thing was the remarkable muscular weakness, so entirely out of proportion with the loss of weight. In a second experiment the dog was given the same amount of peptone solution and 200 grams of mashed potato daily. This period lasted seven days, and while the dog lost the same amount of weight, it continued strong and lively, the addition of the carbohydrates materially modifying the condition. Still other experiments were performed and the general results are summed up as follows: 1. It is impossible to maintain life on peptone alone, as it is on all other strictly nitrogenous foods. 2. On the addition of a small amount of carbohydrate, the nitrogenous loss from the body, with the same amount of albuminous food, is very much retarded. 3. Peptone must be regarded as not only able to replace native albumin as a means of checking nitrogenous loss, but also as a means of increasing albuminous tissue. 4. For a period of forty-five consecutive days, at least, peptone causes no diarrhea or disturbance of the stomach.

100. **Pulmonary Embolism.**—Five cases of pulmonary embolism from thrombosis of iliac veins and pulmonary arteries are reported here, and the author calls attention to the importance of considering this not infrequent accident when giving prognosis. In not one case was there any symptom to suggest thrombosis of the iliac veins, but a favorable prognosis was indicated in all. The most constant symptoms recorded were dyspnea and precordial pain and distress. In one case the first symptom was a severe chill, followed by cold perspiration, cold extremities, cyanosis and irregular action of the heart. Death usually occurred so soon that no detailed statement of symptoms could be made. Biggs follows the rule of carefully removing and examining the blood which flows into the pericardial sac after removal of the heart, and then examining the pulmonary arteries, as large emboli are liable to fall out of the artery when it is cut across or when the lungs are raised for removal and thus may be overlooked. He would strongly urge this method of examination in all cases of sudden death, particularly if preceded by dyspnea.

101. **Uterine Fibroids in Pregnancy.**—The reciprocal effects of pregnancy and fibroids on each other are discussed by Coe, who cites several cases illustrating certain phases of the subject. It may be stated briefly that the rapidity of growth of a fibroid under the influence of pregnancy is in direct proportion to its more or less intimate relation to the uterus. Thus, a pedunculated subperitoneal growth may remain unchanged, while an interstitial tumor undergoes marked enlargement. On the other hand, a subserous fibromyoma situated in the lower uterine segment, or displaced and impacted in the cul-de-sac, may increase in size simply from obstruction to its circulation. The position of the tumor is therefore of no little importance. In some multiple subserous tumors, the effect of pregnancy seemed to be negative, but this is not the rule. Two cases here published show that pregnancy may be entirely masked by this condition. As regards the influence of the neoplasms on the course of pregnancy, it may be said in general that it may proceed normally. He thinks too much stress has been laid on the tendency of gravid fibroid uteri to expel their contents, as well as on the subsequent danger of hemorrhage. In answer to the question, whether we should advise young women with fibroid tumors not to marry, he says, under some conditions, yes, if we detect the growth before marriage, but in the majority of cases they give rise to no symptoms and are only discovered after marriage. It may be said that any fibroid causing marked symptoms, such as hemorrhage, pain and pressure effects should be regarded as a positive contraindication. Coe is in accord with the conservative trend of modern surgery, and would not interrupt pregnancy if it were possible to prolong it without undue risk to the mother. An elective Porro operation at the present day is attended with no more danger than a supravaginal amputation at the third or fourth month. Examination under anesthesia is advisable before deciding as to operation, as the condition may prove to be one that can be safely left to Nature.

102. **Pemphigus of Larynx and Mouth.**—Bryan reports a case of pemphigus involving the laryngeal surface of the right half of the epiglottis. He considers it, in this country at least, a rare affection. The diagnosis of pemphigus on the mucous membrane is not altogether easy. It has to be distinguished from diphtheria, tuberculosis, syphilis, herpes and the corrosive action of caustics. In his case he was aided in the diagnosis by Dr. Jonathan Wright, to whom he sent a sample of the membrane formed. The only remedy appears to be arsenic, which has acted well in this case.

104. **Carbolic Acid.**—The fact that alcohol prevents the tissue-destroying action of carbolic acid has been utilized by Adams, who uses the acid in the pure form, penciling it on the tissues with a camel's-hair brush, and as soon as whitening occurs, freely using absolute alcohol. He has found this effective in cellulitis, carbuncles, erysipelas and in a case of gonorrheal vaginitis which was completely cured in two treatments. He reports five cases and adds one in which an attempted suicide with carbolic acid was completely cured by the free administration of alcohol, without bad effects from either drug. He urges the use of the acid in this way, as offering splendid results at little cost.

106. **X-Ray and Head Injuries.**—Rudis-Jicinsky has been studying the use of X-rays in the diagnosis of head injuries, and considers them very promising. He says that if fracture exists, whether simple, compound or complicated, with fissure or depression, is determined in five seconds without any danger of complication, inflammation, etc. The simple or stellate fissure of the inner table is shown at once, in plain dark lines, and when hematoma is present it can not obscure the outlines. The shadows of bone and hematoma are altogether different. In case of foreign bodies the results are still better, and the value of the method when bony growths exist, and in hydrocephalus is very great. He says: We must always know the power of our X-ray, the distance of the tube from our object, the distance from the plate, the duration of exposure, and the angle at which the picture is taken. If we wish to make a correct diagnosis and produce an accurate picture, we must never be satisfied with one radiograph of the case, but make it also our duty to compare the picture of the injured part with the normal one. Work as rapidly as possible, make short exposures, and protect your patient. To read correctly the lesson of an X-ray picture, know your anatomy and pathology, keep the obliqueness of X-rays always in mind, make it as nearly life-size as possible, to get sharply defined outlines, remembering that we are dealing with shadows only, and use a proper dividing screen (Dennison's, etc.,) for measurements and exactness of pictures.

107. **Vaccination.**—Having had experience with some very sore arms following vaccination, Attwood experimented to discover the cause and finds it due to an improperly prepared or more probably an improperly protected virus. The ivory points so much in use, if not properly isolated, form an excellent culture-medium when exposed to an infectious contamination. The remedy is to use sterile glycerin lymph in hermetically sealed glass tubes, and in performing vaccination to see that the part is made surgically clean and the instruments are thoroughly aseptic. He calls attention to the bad effects of the use of dirty scarifiers, unwashed arms and unclean underwear, which should never be allowed to come in contact with the site of vaccination. He has tried, with good results, the use of a hypodermic syringe for injecting the vaccin matter under the skin, taking care that a thorough sterilization of the instrument was secured.

108. **Effect of Anesthetics on Kidneys.**—Kemp finds that ether produces a special contraction of the renal arterioles with a consequent damaging effect on the renal secretory cells similar to that following clamping of the renal artery. The kidney shrinks in bulk, the secretions diminish, with marked albuminuria, and are finally suppressed. This is not due to any change in the general arterial circulation, since it occurs not only with the use of pure ether but with mixtures containing it. The facts would seem to contraindicate the use of ether as an anesthetic when renal disease exists, and especially when with albuminuria there is a tendency to primary edema. Ether stimulates the heart, but chloroform, while it has no effect on the kidneys, has a direct depressing effect on the

heart. The A. C. E. and Schleich's mixtures are objectionable, because containing both these agents. Kemp doubts the manageability of mixed anesthetics, since with their different evaporating points the more volatile will increase the evaporation of the other. Thus, more chloroform will be inhaled if mixed with ether than if administered separately. He believes anesthol to be a dangerous anesthetic, causing, as he has shown, respiratory poisoning due to ethyl chlorid; an aggravated chloroform heart and the renal effects of ether. Nitrous oxid and oxygen are least dangerous to the kidneys, chloroform nearly as safe in this regard and ether the worst of the three. He advises, for scientific study of the effects of anesthetics, careful examination of the urine for twenty-four to forty-eight hours before operation, noting urea, indican and chlorids, catheterizing the patient immediately before anesthesia and examining the specimen, and also immediately after the administration, with careful analysis. He has found indican markedly increased by ether, and somewhat less so by chloroform and nitrous oxid. He thinks the possible significance of this is worthy of further investigation. The paper concludes with tabulated statements of statistics gathered from cases. He quotes Lawson Tait's opinion that the dangers of chloroform are immediate, but the dangers of ether, though less direct, may be even greater, and that cases, if followed up would, perhaps, reverse the records as they now stand.

109. **Anesthetics.**—The article by Thomson contains, with additions, the remarks made by the president in the discussion of Dr. Kemp's paper. He does not condemn ether so absolutely as is apparently done by Dr. Kemp. The fact that chloroform kills in so many ways, and is so immediate in this regard, is a matter for serious consideration. Thomson says he knows of only one condition in ordinary medical practice in which he would feel quite easy with chloroform, and that is when a regular but high tension pulse exists. A weak compressible pulse, on the other hand, decidedly contraindicates it, as does high tension pulse contraindicate ether. He speaks in conclusion of the methods of local analgesia, and gives details to be followed in their use. 1. An elastic bandage should be applied whenever possible, even on the scalp. 2. The cocain or eucain to be used should be dissolved in a saline solution of definite strength. Eucain has some advantage over cocain in being only one-fourth as toxic, and its solution can be sterilized by boiling. The best strength of the solution is 1 per cent. 3. The skin should be benumbed for the initial insertion of the needle, by cold, and a ring of infiltration should be made around the part to be excised, by injecting at the outer limit until a wheal of infiltrated skin is raised; then a second is made within its circumference. By this means the prick of the needle will not be felt. 4. The line of proposed incision is infiltrated and the cutting begun. This process requires time for complete analgesia and, therefore, can not be done in a hurry. But with the precautions mentioned, such operations as radical cures for hernia, abdominal laparotomy, etc., have been performed successfully. He says: "The contraindications of such operations are where the edema caused by the infiltrations would interfere with the subsequent coaptation of the parts, as in plastic operations, also in most operations about the eyes, nose, or mouth, or in young children and in nervous patients, who might faint at the sight of blood. But in so many cases can this procedure be successfully employed without incurring any risk whatever that it is fully worthy to be classed among the important advances of modern surgery."

111. **Recurrence of Tonsil After Excision.**—A case is reported by Hopkins, of recurrence of a tonsil after excision, which surprised him and led him to an examination of the literature. He finds several cases recorded, and in his experience some testimonies of such occurrences from the laity. This paper reviews the opinions of various authors on the subject, showing wide differences. The fact that laryngologists report so few suggests the idea that under general anesthesia now so commonly used, more thorough operations are performed and recurrence is more rare. Among the causes of recurrence, aside from imperfect operation, are a tuberculous or specific dyscrasia and an acute inflammation of the stump.

112. **Hemostatic Use of Gelatin.**—The use of the coagulating influence of gelatin on the blood to secure hemostasis in hemorrhagic conditions and aneurysms is a recent French introduction, and is here reviewed by Nichols, who mentions its value and dangers. The internal administration by injection is not fully developed as regards dosage, and there are certain points yet required to be determined in regard to it. He reviews the results obtained by this method in aneurysms, hemorrhage, etc., and then passes to the local use of a 5 or 10 per cent. solution with .6 to 1 per cent. of calcium chlorid in 100 parts of water, following, as in all administrations of gelatin, the rules of asepsis. This has been found valuable in obstinate epistaxis in one case, at least, of gastric hemorrhage, and in hemorrhoidal poisoning, in uterine hemorrhage and in superficial wounds. Nichols reports a case of hemophilia, apparently desperate, treated by the local use of gelatin solution put on to the bleeding surface, at once controlling the hemorrhage, which had been violent and unmanageable for a week. He says: "In conclusion, it is perhaps too early as yet to fix a final estimate of the value of the hemostatic use of gelatin, but if such successful and remarkable results can be constantly obtained as have been claimed by some observers, it is certain that the agent would be of great value in the treatment of some very serious and intractable conditions. No claim has been made that gelatin is a specific in any class of cases, nor that it should supersede ordinary methods of hemostasis. In cases which resist other methods of treatment, and such cases are usually very serious and even desperate, gelatin offers some hope, if only a forlorn hope of success. If only a portion of cases of hemophilia, which is such an appalling and disastrous complication, or of inoperable aneurysms, the treatment of which heretofore has at best been uncertain, yield to this agent, any proportion of lives thus saved, however small, will be ample justification for the use of gelatin." The article concludes with a bibliography of the subject.

113. **Microbes and Cold.**—After noticing the facts in regard to the influence of cold on microbes, especially the microbe of yellow fever, Vitale says: "We can deduce the conclusion that all microbes offer resistance to temperature that bears a certain relation to the medium in which they live, and that this relation varies not only for low temperatures, but also for temperatures above the normal. Chamberland demonstrated, in a two-branched Pasteur tube, that the spores of bacteria exposed to boiling temperature offered a resistance to heat which varied according to the nutrient medium in which they were placed. In liquid yeast, for instance, spores of bacteria remained alive for five hours after boiling. In a hay infusion they also remained alive for five hours, in a Liebig bouillon solution they remained alive but for three hours, in must of grape that had been carefully neutralized they were killed by boiling in half an hour. In a nutritive solution whose acidity was more than 2 per 1000 bacteria remained alive at a boiling temperature for only ten minutes. The temperature exerts an influence on microbes which bears a direct relation to the media in which they are being cultivated, and the resistance they offer is just so much greater as the media on which they live, whether they be natural or artificial, are favorable to the vitality of the microbes."

114. This article is abstracted above. See ¶ 62.

115. **Causes and Management of First Stages of Labor.**—A delayed first stage is considered by many physicians as only detrimental, from its interference with other duties, but Gillespie points out that it is a serious matter for the fetus and sometimes also for the mother if unduly prolonged. Its cause may be lack of muscular development, excessive false pains prior to confinement, in which case chloral or chloroform are useful, and a good primary treatment consists in the administration of strychnin for several weeks prior to labor. He mentions also a very painful complication which is frequently diagnosed as rigid os, but which consists of inability to completely evacuate the bladder and is quickly relieved by catheterization. Other causes are faults in presentation and position, which are discussed in some detail, uterine obliquity, excessive sacro-vertebral angle, cicatrices, contracted pelvis brim. He insists on the following points, which he thinks are too often disregarded in the management of the first stage of labor: "1. A slow second stage of labor is seldom seen except in women who have had a protracted first stage. 2. We are not justified in diagnosing 'rigid os' until we have exhausted

every effort to find a specific cause for the condition. When we become thoroughly imbued with this idea the cases which can be classed as rigidity become so rare as scarcely to merit consideration. An organ which possesses sufficient strength to rupture its own walls, in the presence of an insuperable obstacle, should surely have little difficulty in dilating its own orifice, if it can bring its force to bear properly. 3. Tetanic contraction of the uterus is much more common than usually admitted, if we include those cases where the uterus, in whole or in part, does not completely relax in the interval between pains. Such tetanic contractions, even if not of sufficient intensity to shut off the utero-placental circulation, do interfere sufficiently to render the child's chances of survival less, especially if the second stage is not prompt."

117. See abstract in JOURNAL, November 25, p. 1260.

118. **Uterine Fibroids.**—The theories of the formation of uterine fibroids are not very satisfactory, and are summarized by Murray, as follows: 1. Cohnheim's theory, upheld by many others, that they are developed from embryonic tissue, the mesoblast. 2. Disturbance of the nutrition of the part through interference with the blood-supply. 3. The microbic theory. She reports a number of cases, and from reviewing these, offers the following summary of suggestions and conclusions: 1. The possibility of determining definite clinical symptoms which would lead to a recognition of a distinct formative period of uterine fibroids, which might suggest a preventive treatment. 2. The predisposing causes of race, age—other than that of adult life—or condition count for little, and the elaborate reports which form the bulk of the literature up to the present time are of doubtful value. 3. The chronic inflammatory conditions of the endometrium, uterine parenchyma, and of the ovaries and tubes are most powerful predisposing causes, and there is a direct relation between the hyperplasia of the uterus and the formation of fibromyomata. 4. Extreme disturbances of the nervous system precede and accompany the formation of uterine fibroids. Insomnia, headaches, and hyperesthesia of the sensory organs are present to a greater degree than is usually found when the concomitant symptoms of the inflammatory condition of the uterus are present. 5. The evolution of the fibroid from the fibromatous centers, when it begins to take on growth, is exceedingly rapid, and it is impossible to tell the age of the growth by its size. The rapid appearance and development are the reasons why so few fibroids are seen and examined in their incipiency. The size and rapidity of growth depend on its blood-supply, which is determined from the beginning by the location of the nidus, and therefore such conditions as pregnancy or the menopause could have little influence. 6. The possibility of the action of curettage as a predisposing cause for these tumors on account of the violence done to the blood-vessels, and of hastening their growth, because of concentrating the blood-supply. 7. The crystallizing effect of Keiffer's experiments on the theories in regard to the formation of fibromyomata. He has demonstrated that the blood-supply is cut off from the uterine tissue, which then becomes condensed into whorls of fibrillæ which afterward develop into fibroids, obtaining their blood-supply from the surrounding uterine tissue. He has shown that the tumors are composed of a histologic structure in no way differing from the normal uterine tissue, save that which related to the concentric arrangement of fibrillæ. There was no evidence of embryonic tissue or new formation.

119. **Diagnosis of Obliteration of Receptaculum Chyli.**—Obstruction in the course of the thoracic duct usually produces chylothorax and chyloperitoneum, and chyluria is often present. Smith remarks that quite a number of cases of obstruction are on record, but the question of emaciation as connected with the condition of the duct is not referred to except, perhaps, incidentally. He remarks on two cases under his own observation, one of them the noted one of President Garfield, and notices three or four others from other authorities. The diagnosis is not always clear, but he suggests that from his two cases, and from the foregoing citations, it would seem that when, with symptoms of disease in or about the stomach, we have more rapid emaciation than can be otherwise explained, we are justified in making the diagnosis of probable obliteration of the receptaculum chyli, and that this probability will be increased to a very strong presumption if there are in addition rather copious pale, semifluid passages from the bowels. Under such conditions we should not place much dependence on fatty substances as articles of diet. Milk, so much relied on in gastric disorders, will be useful only for the proteids and the sugar which it contains. Albuminous and saccharine or sugar-producing foods must be employed in sufficient quanity to compensate for the loss of fats.

120. **Laryngeal Stenosis and Intubation.**—The ordinary cause of recurring laryngeal stenosis following intubation is the forcible pushing of the tube into edematous or infiltrated mucous membrane, and its mechanism is here discussed by Fischer, who agrees with O'Dwyer that traumatism is the chief and only cause of this, and the only safe-guard against it with an edematous or infiltrated mucous membrane is in using the small caliber tubes. In ordinary membranous diphtheria any tube must be introduced in the gentlest manner possible, and it is a wise rule to remove metal tubes every five days, to avoid irritation from calcareous deposits. If a tube must be introduced more than twice, Fischer has adopted a plan suggested by O'Dwyer, but not mentioned in the text-books, which consists of taking a rubber tube and immersing it in a solution of hot gelatin containing 5 or 10 per cent. of powdered alum, thus introducing the tube with this covering of alum gelatin. He has also had good results with a 10 per cent. solution of ichthyol and gelatin, and a 3 per cent. solution of europhen. He also notices specific stenosis found in syphilitic children, always congenital and taxing the skill of the physician.

121. **Graves' Disease.**—The thyrogenic theory of Graves' disease is held by Minor, who reports two cases of the disorder successfully treated by regulated diet, lactate and albuminate of iron and intestinal antiseptics. His chief reliance, however, is a modified form of lavage, which he describes. The patient, at bed-time, lies on the right side with the hips higher than the shoulders,, the right side being insisted on in order to make the flow from the splenic to the hepatic flexures easier. With a fountain syringe he then allows from one quart to one gallon of hot water at from 100 to 105 F., or even hotter, to flow slowly into the rectum, through the usual rectal nozzle, until the whole colon is full. The larger the quantity used the better, and patients soon learn to tolerate at least a gallon. This water is to be retained for half an hour, which is at first difficult, but soon becomes easy, and is then evacuated. Clinical experience and deductions from well-known physiologic facts justify him in claiming that a large part of the water is absorbed by the intestinal wall, thus reaches the portal blood and therefore the liver, which it washes out and stimulates to greater activity as a poison destroyer, and increases the flow of bile, thereby aiding in disinfecting the bowel, and lessening putrefaction, if the view that this is a function of this fluid be correct. Aside from this, free diuresis is produced, and if the water be hot enough, diaphoresis as well, thus powerfully disintoxicating the system. Certainly the results of a long use of this remedy have satisfied me that such is its effect, and certainly the case in point was no exception. The lavage was for a time ordered nightly; then at longer and longer intervals as the conditions demanded, but not finally stopped for about a year. While admitting that his experience is not as yet large, he thinks that these cases safely show that some forms of Graves' disease have their origin in intestinal fermentation, and treatment directed to this factor can cure the disease.

FOREIGN.

British Medical Journal, November 18.

Relation of Large-Celled Indurative Hyperplasia of Lymphatic Glands to Tuberculosis. HUGH WALSHAM.—The indurative hyperplasia of the lymphatic glands, met with in post-mortems of patients who have died of pulmonary tuberculosis, is familiar. Their significance is here discussed by Walsham, who disagrees with Ziegler as to their not being tuberculous. He reports an autopsy of a case in which, with a small focus of tuberculosis in the right lung and typically tubercular bronchial glands, the cervical glands were found in a condition of large-celled hyperplasia. In this case we have the two conditions existing together, the bronchial glands tuberculous and the cervical in a condition which he considers equally so. How the bronchial glands became affected is not clear. Careful search of the tonsils gave negative results While the tubercle bacilli could not be found in the cervical

glands, he thinks we may consider this large-celled hyperplasia a kind of pretuberculous change.

Diphtheria Mortality of Three Principal Australian Colonies for Past Fifteen Years.—A. JEFFERIS TURNER.—The statistics of these three colonies, as regards diphtheria mortality, are discussed by Turner, who notices their special conditions as to climate, changes of population, etc. He finds that in Queensland there has been a reduction of over 60 per cent. in the diphtheria mortality since 1895, the date of introduction of antitoxin treatment. In New South Wales the reduction is almost equally great, but it is only about one-half as much in the colony of Victoria, where there have been larger variations in mortality than in the others. In the three colonies taken together, the proportionate reduction of the death-rate from 1895 to 1898, as compared with that from 1891 to 1894, was 49.5. These figures are far more favorable than the corresponding ones for England and Wales, which he suggests may possibly be underestimated. Nevertheless, the saving of infant life even at the rate in Great Britain is a very important gain.

Lancet, November 18.

Etiology and Treatment of Inguinal Hernia in the Young. R. HAMILTON RUSSELL.—That inguinal hernia in childhood is always due to the presence of a congenital sac, and that removal of the sac in early life completely cures the hernia, is held by Russell. An exception should be made of certain acquired hernias which he considers to be always direct and places in a special class. He disagrees with the opinion that operation for hernia should never be undertaken in the case of a young child, and that a truss should be used instead. In his 60 cases, he has had one fatality due to suppuration of the ligature placed on the neck of the sac, the material being faulty. This exceptional case, however, he does not think alters the fact that these operations are not more dangerous in the child than in the healthy young adult, though the operation itself is more difficult and demands more skill. The operation as performed by him is as follows: The incision is made in the groin, parallel to Poupart's ligament, the cord sought for, its coverings successively opened and the cord, sac and testicle drawn out of the scrotum. The vas deferens and the vessels of the cord are next defined and separated and the sac is freed from these structures as high up in the canal as possible. A chromicized catgut ligature is now applied in the form of a Staffordshire knot, and the sac removed, the superfluous coverings of the cord carefully washed, dried and replaced in the scrotum. The wound in the groin is closed by the subcuticular method of suturing, a single thread of silkworm gut being used for this purpose, the two ends of which emerge from the skin about one-half inch from either extremity of the wound. A single layer of gauze and collodion is then applied, and when this is sufficiently dried a pad of dry dressing is bandaged on over all. The child, if small is placed in a double long splint to which it should have been accustomed for a day or two before the operation. At the end of a week the silkworm gut thread is withdrawn without disturbing the gauze and collodion, and a day or two later the child may be allowed to run about. He thinks this method offers a perfectly reliable and permanent cure of any case of inguinal hernia in a child. As regards inguinal hernia in female children, the operation is widely different, being about the simplest in surgery, and can be easily done in five minutes, amounting to less than the suture of a single hare-lip. The application of a truss in inguinal hernia in girls he characterizes as absurd.

Removal of Lens in Cases of High Myopia. ADOLPH BRONNER.—The author holds that we should remove the lens in high degrees of myopia, not only to procure better vision but to prevent increase of the myopia. The objection that detachment of the retina may occur, he answers by saying that our statistics on this point are yet incomplete, and the accident depends to some extent on the skill of the surgeon. If there is loss of vitreous, or if the vitreous is damaged by the discission needle, there is danger. We should operate on both eyes, but only on one at a time. In this way we avoid danger of divergent squint.

Modern Views as to Causation and Treatment of Gout. ARTHUR P. LUFF.—That in gout, owing to an inability on the part of the kidneys to fully excrete the uric acid, there is an absorption of the non-excreted portion into the circulation and the gouty deposits are ultimately formed, is Luff's view. He does not think that uric acid compounds exercise any poisonous or irritant effect when in solution in the blood or lymph. The trouble is due, most probably, to the precipitation of the crystalline sodium biurate in the tissues, producing irritation and inflammation. The view that a diminished alkalinity of the blood is associated with gout is based on pure hypothesis, and shown by experimental investigation to be erroneous. As regards treatment, its objects are to treat the gouty paroxysm and relieve severe pain. This can be done by free administration of colchicum and potassium citrate, and by a mild blue pill and Epsom salts. The painful joint should be packed with wool saturated with a warm alkaline and anodyne lotion. For the elimination of uric acid, free diuresis should be encouraged by the giving of plenty of water and the use of potassium citrate or bicarbonate or similar salts. Green vegetable food should be freely taken. The excessive formation of uric acid should be checked and by a carefully selected dietary. While a mixed diet is best suited, it should be a simple one and there should not be too much mixing of proteids and carbohydrates. The metabolism of the liver should be promoted by the administration of guaiacum, an occasional mild cholagogue pill, and by keeping the bowels open. General hygiene should be attended to, with exercise suited to the patient as soon as he is fitted for it. Enlarged joints and gouty deposits should be treated by massage, the constant current and cataphoresis to remove the deposited salts. He has had excellent results from these measures. Baths of various kinds, including hot air and radiant heat baths are most valuable. Suitable treatment at a properly selected spa is also of great benefit.

Journal of Laryngology, Rhinology and Otology (London), November.

Chronic Muco-Purulent Catarrh of Antrum of Highmore Simulating Postnasal Catarrh. A. J. BRADY.—The author holds that there is a form of antral suppuration, rarely recognized, differing mainly from the typical cases in that pus never appears in the anterior nares. He narrates a case which had been variously diagnosed, but which proved to be of this character. The only way to properly investigate the condition and cure the disease is to make a free opening in the canine fossa. He finds the burr and engine a great improvement in this operation, over former methods.

Diagnosis and Treatment of Chronic Empyema of Frontal Sinus. W. MILLIGAN.—This author says the correct diagnosis of this condition will require opening and inspection. As regards treatment, the question of palliative measures or radical operation arises. When no actual pain is present, free intranasal drainage by anterior turbinectomy, cauterization, etc., may do good service, but the proportion of cases where this is effective is small. Actual obstruction of the duct is not, he thinks, particularly common, but the more important feature is the chronic inflammation, producing a narrowing of the whole sinus cavity and cystic degeneration, polypi, etc. In whichever way the sinus is opened, whether by supraorbital or median incision, great care should be taken to scrape away all edematous polypoid or hypertrophied mucosa; to establish free communication with the interior of the nose and to fix within the sinus a drainage-tube sufficiently large to keep the opening patent. This, he thinks, should be kept in place not a few days but many weeks, until all danger of the passage closing is past.

Semaine Medicale (Paris), November 15.

Diabetes Mellitus from Chronic Insufficiency of the Liver. A. GILBERT and E. WEIL.—The writers establish the existence of a diabetes caused by chronic "anhepatism," as they call it, chronic defective functioning of the liver cell, which may or may not be accompanied by organic lesions. The basis is probably a primary functional defect in the cells, hereditary or acquired, associated or not with arteriosclerosis. It is characterized by a peculiar urinary syndrome: indicanuria, urobilinuria, hypoazoturia and spontaneous or readily induced glycosuria, and appears in the course of various affections, especially infectious diseases such as la grippe or pneumonia, or during an attack of hepatic colic. Usually transient and latent, this syndrome, which is the expression of insufficiency of the liver, may persist and entail certain disturbances

and complications such as are noted in fully developed diabetes mellitus. An actual diabetes from chronic insufficiency of the liver is thus constituted. It is only by means of a new technic—hepatic opotherapy—that it has been possible to distinguish this form of diabetes from the arthritic, with which it has always been confounded. This form is mild, always curable by treatment, but rarely spontaneously; it is liable to become intermittent or latent, as well as to recur at the slightest pathogenic incident. The important complications of diabetes are exceptional; the amount of urine remains normal and thirst is not excessive, but the mouth is dry and in some cases an alveola-dental gingivitis leads to the spontaneous, painless expulsion of teeth. The nervous symptoms are similar to those of *grand diabete*, but never to the extent of coma nor severe intoxication. Atheroma was frequently noted, also amblyopia and cataract. The cutaneous lesions heal readily, as also wounds from surgical intervention. An interesting feature is that the glycosuria corresponds to digestion, and vanished completely by the fifth hour after a meal in the tests tabulated. This form of diabetes is generally curable with hepatic opotherapy. It can even be said that this medication is only effective in this form of diabetes, of which it constitutes the touchstone and completes the pathologic autonomy. Twelve doses of liver extract, of twelve grams each, representing 100 grams of fresh liver, taken every day or two, will cure it. Exclusive milk diet is also effectual; also Vichy and other alkaline waters. This form of diabetes occurred in twenty-four out of thirty-seven cases of diabetes in the writer's experience during the past two years. Nineteen were men, the youngest 23, the oldest 70. In the two autopsies no lesions were found. Hepatic colic may induce a typical acute but transient diabetes, as they observed in several cases, and as this does not require a lesion, a reflex inhibiting action must be assumed for the cause. This cause also explains the diabetes from excessive functioning of the liver. It may or may not be purely functional, the same as the other. It is a *grand diabete*, in which the exaggerated functioning of the liver is evident in a considerable glycosuria with hyperazoturia but no urobilin nor indican. It was in this form that they observed a hepatic colic, in the course of a superposed biliary lithiasis, diminish the glycosuria by reflex action. This fact, which seems to contradict those mentioned above, is explained by inhibiting reflex action from irritation of the bulbar centers.

Berliner Klinische Wochenschrift, November 6.

White and Red Meat in Diet of Sick. H. SENATOR.—The research reported by Offer and Rosenquist in regard to the nitrogenous extractives of meats fills a gap in our knowledge in respect to this important article of food, but their sweeping assertions that "the difference between white and red meat is so slight that a distinction between them is superfluous," (see JOURNAL, p. 1430) contradicts long clinical experience, and Senator hastens to reply that their research was only with uncooked meats, and that their conclusions do not apply to the cooked meats used as food. They also overlooked the non-nitrogenous extractive always present in meat, and also the fact that the difference in the composition of meats depends on something more than the mere amount of nitrogenous extractive they contain. Rosenfeld and Orgler demonstrated, in 1896, that the uric acid and alloxur bodies in the urine increase with the amount of nitrogen in the meat and the waste from the destruction of albumin, which is by no means an indifferent matter in the case of gouty or diabetic subjects.

Electrolysis in Treatment of Nose. A. BOCK.—"Electrolysis combines all the advantages of other methods of treatment with none of their disadvantages." There is little if any pain, no bleeding, no after inconveniences, no interference with the usual occupations, the guarantee that no synechiæ will develop, the complete oversight of the operation, no infection, no disturbance in the general health or psyche. The only objection that can be urged is the length of time required for the course of treatment. It proved especially effective in overcoming the deformities in the *septi narium*, in sixty-five cases, with an average of six to seven applications. Acne rosacea and ozena were much benefited; verruca, nevi, calcified atheromata, and ear excrescences were removed in numbers of cases, and always without a perceptible scar or the annoyance of a permanent tampon.

Chronic Stricture of the Small Intestine. J. SKLODOWSKI.—The symptoms of chronic stricture of the small intestine are: 1. A spasmodic rigidity of the proximal portion of the intestine, which becomes distended and visible as a very hard tumor suddenly forming and as suddenly subsiding after a few seconds, due to the stagnation and retention of gases and fluids above the stricture, and the vigorous efforts of the muscles to force the contents through the narrow opening. This symptom may occur without pain, but the pains never occur without this symptom, of which they are the subjective expression. The pains are characteristic, more like labor pains than colics, lasting two or three minutes but possibly recurring often, during what the writer calls the "period of pains," the subject feeling perfectly well during the intervals. Purgatives induce a long and intense period of pains, and should be avoided except as a differentiating measure. The musculature of the entire abdomen may become sensitive to pressure if the pains persist a long while. Even if complicated by complete occlusion, the pains still retain their intermittent character. The feces are normal, although constipation or diarrhea may prevail, but do not seem to have any connection with the pains. The second symptom is a spasmodic rising and falling of the loops of the intestines, causing them to become visible and palpable like long tumors, but less pronounced than the first symptom mentioned, and not accompanied by pain. The typical, regular character of these motor phenomena is also characteristic. There is no special continuous peristalsis. In locating the stricture, it must be borne in mind that if near the pylorus, the symptoms will soon involve the stomach. The motor phenomena depending on a stricture of this kind are usually limited to the hypogastric and umbilical region, while in case of stricture of the colon, they are usually in the upper or side regions of the abdomen. The size, contour and localization of the protuberances are the best guides in differentiating. The protuberances are always accompanied by more or less rumbling, and a splashing can be induced as with dilatation of the stomach. In case of stricture of the colon, the tension and hardness are more permanent and circumscribed, and the differences between the tonic contractions are less. Hard fecal masses palpated in the portion assumed to be above the stricture speak for the colon, while the splashing indicates the gas and fluid contents of the small intestine. Information can often be derived from thorough scrutiny of the rectum, from the anamnesis, etc. With stenosis of the colon, the feces are sometimes flattened, like a ribbon. The direction of the waves of peristalsis and the sounds do not have much diagnostic value. If the symptoms of partial occlusion have lasted a year or more without appreciable marasmus, a malignant neoplasm can probably be excluded. In this connection he notes the frequency of carcinoma in the intestines as established at Nothnagel's clinic during the last twenty-four years in 343 autopsies; rectum, 162; colon, 164; ileum, 10; jejunum, 0; duodenum, 7. In the 5 observations that form the basis of this study of chronic stricture of the small intestine, 2 were due to a cicatrix of the tuberculous lesion in the small intestine, 1 to a small incarcerated hernia of the intestinal wall in the internal inguinal ring, and 2 to adhesions after herniotomy. All foods that tend to excite peristalsis must be avoided. Opium will be found useful. A positive or even a probability diagnosis after careful study of each case, imposes surgical intervention. The prognosis is favorable.

Deutsche Medicinische Wochenschrift (Leipsic), November 9 and 16.

Embryotrophy. BONNET.—In this communication Bonnet traces through the animal kingdom the constant striving for more and more complete nourishment for the intrauterine embryo, to its maximum in man, and asserts that the insignificant extravasations noted in the indeciduates increase in the deciduates to considerable effusions of blood, occurring repeatedly and evidently serving for the nourishment of the embryo and amnion, until in the hedge-hog, bat and man, even these are not sufficient and the maternal blood is taken directly by the ectoderm, for nourishment.

Operative Treatment of Otitic Meningitis. R. MUELLER.—The existence of a serous form of meningitis has been recently established, and also the fact that, like the suppurative

form, it may originate in an otitis or its consequences, and compel surgical intervention. Mueller describes two observations. In both, the diagnosis of a cerebral abscess consecutive to otitis had been made, but no abscess was found when operated on, and yet both patients were cured by the mere fact of the intervention. The correct diagnosis proved to be meningitis externa serosa chronica in one, and serosa interna acuta in the other. The symptoms in the first indicated a compressing cerebral abscess, and the sensitiveness of the left mastoid process in connection with a preceding otitis treated by curetting the antrum left little doubt that the trouble had originated from the ear. The slow pulse and congested retina suggested compression inside the skull, while headache, motor weakness, hypoesthesia of the right side, vomiting, vertigo, numbness and slight elevation of temperature fitted into the picture of a temporal lobe abscess, although there was no aphasia. The absence of stiffness in the neck and high fever and the regular pulse, militated against suppurative meningitis. No pus was found, but the amount of serous fluid indicated a pathologic increase, especially the abundance that gushed when the hard membrane was incised, and the amount that continued to exude for days afterward. The affection was evidently a suppurative meningitis in its incipient stage of hyperemia and serous effusion. The chronic character was evidenced by the long-continued headaches that had preceded the intervention, and the fact that all of the symptoms were not cured; the disturbances in gait and equilibrium still persist, showing that permanent lesions had been induced, and recent vomiting and vertigo suggest that the process still continues in a mild chronic form. Mere incision of the brain membrane and draining, however, saved the subject's life, and Mueller advances reasons for preferring this procedure to lumbar puncture in this and similar cases. In the second observation the diagnosis was still dubious for weeks after the intervention. The brain matter protruded through the incision and portions of it kept necrosing and dropping off, until a most remarkable amount of brain substance had been lost without apparent injury. The threatening symptoms induced by the compression of the brain lost their intensity from the moment the brain was incised and the compressed brain substance found an opportunity to stretch and loosen. The hernia of brain matter gradually subsided, the serous effusion diminished and the patient recovered without incident. This case emphasizes the advantages of the method always followed by the writer, of never operating on an otitic cerebral abscess through the wound in or by the ear, but always entering from without, beyond, where hernia, etc., are under control.

Intoxication of a Troop with Potatoes Containing an Abnormal Amount of Solanin. E. PFUHL.—About the first of June fifty-six men were affected with an acute catarrh of the stomach and intestines, for a few days, the cause traced to a new lot of potatoes received, which the men had eaten peeled and boiled. Others who had not eaten so freely were exempt. The peeled raw potatoes were found to contain 0.38 per 1000 solanin, and the same boiled, 0.24 per 1000, while the normal amount is 0.06 in May and 0.064 per 1000 in June. Those who had eaten their entire portion had thus ingested 0.30 gram of solanin, an amount capable of producing severe disturbances. Small gray dots and spots were noted in the peeled potatoes, and these spots were found to contain one-third more solanin than the rest. The appearance of an acute stomach and intestinal catarrh, with chill, vertigo and sleeplessness two hours or more after a meal at which potatoes have been partaken of freely, should suggest the idea of solanin intoxication.

Chronic Degeneration of Cardiac Muscle.—HOCHHAUS and REINECKE.—Dehio announced, not long ago (*Deu. Arch. f. Klin. Med.*, lxii), that besides the foci of induration in heart musculature, the so-called *Schwielenbildung*, consecutive to necrosis of the muscle around a diseased vessel, or originating in an inflammation of the endocardium or pericardium, etc., there was also a profuse proliferation of connective tissue which extended over the entire heart, involving the interfascicular as well as the interstitial tissues, not originating in the vessels nor pericardium, but due to quite another cause, to the dilatation of the hypertrophied heart which stretched the fibers until it weakened them and they degenerated, their place being taken by proliferative connective-tissue, as a process of repair. This proliferation he added, occurs most prominently in the auricle, as its weaker muscular wall is the least able to stand prolonged increased pressure. He also suggests the possibility that it may also originate in a regular interstitial inflammation, such as occurs in infectious diseases. Dehio calls this diffuse *Schwielenbildung* myofibrosis, and if his statements are confirmed our knowledge of the pathology of the heart will be materially advanced. He found it in all kinds of heart affections, and also in senile hearts, in which case he attributes it to sclerosis of the coronaries. Hochhaus and Reinecke have been seeking evidences of this myofibrosis during the past year, to confirm Dehio's assertions, but they now announce that in none of their preparations were they able to distinguish any diffuse lesion, finding nothing but the familiar foci of connective-tissue formation. They examined fourteen hearts, three senile, six with valvular lesions and one each of scarlet fever, puerperal sepsis, pulmonary tuberculosis and two of diphtheria. Normal patches were found in each, between the *Schwielen*, and the left auricle was always less involved than the left ventricle. In one heart alone, from a case of diphtheria and empyema, the interstitial inflammation extended over such large expanses as to indicate that if the disease had not terminated fatally, a diffuse interstitial myocarditis would certainly have developed. Such cases are extremely rare. The writers only know one other instance, related by Heller (unpublished), in which the heart of a scarlet fever patient was the seat of such intense interstitial inflammation that the entire organ was much increased in size. The possibility that myofibrosis may proceed from a so-called infectious myocarditis must therefore be conceded, but only as a very infrequent occurrence. The mechanism also seems to differ from that advanced by Dehio. His assumption that it is due to the stretching is not confirmed by the facts observed. The hypertrophied fibers seem to stand the stretching without injury, as long as the vessels connected with them are intact. The other explanation is more plausible, that a diffuse infectious inflammation may entail general myofibrosis. Further research will establish the frequency of its occurrence.

Mitteilungen a.d. Grenzgebieten der Medicin u. Chirurgie (Jena), v. 1, 2, 3.

Surgical Treatment of Acute Peritonitis. A. TIETZE.—This comprehensive study of numerous collected and twenty-five personal cases—245 references in the bibliography—establishes the following indications for intervention: 1. The principal factor in the beneficial effect of surgical intervention is the evacuation of an infectious—toxic—exudate, combined with the relief in the tension of the abdominal walls and restoration of normal conditions in the circulation, with possibly the limitation of an incipient inflammation to its focus. 2. Intervention is therefore indicated whenever there are evidences of an exudate in either the circumscribed or diffuse variety. 3. Intervention is also indicated whether there is an exudate or not, in the first stages of peritonitis from perforation, traumatic or post-operative. A commencing septic peritonitis seems to be curable under these circumstances. 4. On the other hand, an already advanced, diffuse, septic peritonitis is not a subject for surgical intervention. 5. We must also except the dry form of diffuse septic inflammation which, although accompanied by symptoms of general irritation on the part of the peritoneum runs its course without any participation on the part of the organism as a whole. This also counterindicates an operation; likewise all cases in which the general infection is so far advanced that intervention is hopeless from the start. Tietze never rinses the abdominal cavity, but leaves the abdomen partially open and drains with gauze compresses stuffed in between the loops of the intestines. They hold the inflamed parts much firmer and quieter than opiates, which he never uses. They prove most satisfactory drains, although they stick to the loops and, theoretically, may later induce adhesions and disturbances in the functions of the intestines. But clinical experience and Schnitzler's experimental research have demonstrated that they become in time partially detached, and in any event it must be borne in mind that a peritonitis always leaves numerous adhesions behind it.

Surgical Treatment of Tuberculous Peritonitis. J. HERZFELD.—Eighteen complete recoveries out of twenty-nine operated on since 1890, are reported by Herzfeld, including seven children, i.e., 62 per cent. recovered. Löhlein reports

33.3 per cent. recoveries; Chrobak, 55 per cent; Czerny, 3 in 10, and Scheuer, 7 in 13. Experience has established that recovery may be followed by complete *restitutio ad integrum*, and that intervention must not be either too late or too early, which explains why a second laparotomy sometimes succeeds when the first has failed.

Influence of Longitudinal Incision of Kidney on Acute and Chronic Disease. J. ISRAEL.—The success obtained in the large number of observations related in this communication opens a new horizon for the surgery of the kidneys, and encourages the surgeon to operate in many cases of nephritis in which internal medicine is powerless. In one patient, a woman of 61, there was complete anuria persisting for several days, in consequene of peracute inflammation of the left kidney, eight months after extirpation of the right kidney on account of tuberculosis. The kidney was incised down to the pelvis, the incision carried along the largest part of the convex border. Evidences of recent peracute pyelonephritis and non-necrotic abscesses were noted. The organ was loosely tamponned. All the urine soaked into the dressings for twelve days, when natural elimination was gradually re-established; the uremic symptoms all disappeared and the patient was restored to health and now considers himself perfectly well. Fourteen other observations are described, including cases of nephralgia, hematuric nephritis and angioneurotic renal hemorrhage, all treated by this simple longitudinal incision. Symptoms occurring on one side only are no evidence that the affection is restricted to one kidney, we know, but, on the other hand, the complete restoration to normal after this operation on one side only, is an indication that the process was limited to this one side. Six of the 14 were permanently cured; 2 with serious bilateral nephritis died; 3 have relapsed, but with much attenuated symptoms, and 2 are too recent to be discussed. Israel's experience with these cases confirms the existence of unilateral nephritis also that nephritis can induce renal colic similar in every respect to colic from a calculus; that severe nephritis can exist with no albumin nor tube-casts in the urine; that bilateral nephritis may induce colic on one side alone; that hyaline and other casts can be found in the urine with entire lack of albumin; that there is a variety of nephritis accompanied by profuse, paroxysmal hemorrhage, and these hemorrhages can appear and continue without colic. They are not the cause of the colic. Both hemorrhage and colic are the results of the congestion of the kidney. A large number of the syndromes hitherto called nephralgias, hematuric nephralgia, angioneurotic renal hemorrhage, etc., should in reality be attributed to nephritic processes. Incision of the kidney has in many cases a remarkably favorable effect on these nephritic processes. Anuria from acute ascending nephritis can be cured by thus slitting the kidney, and the wound should not be sutured.

Wiener Klinische Rundschau, November 5.

New Radioscopic Symptom of Bronchial Stenosis. G. HOLZKNECHT.—In a patient at Nothnagel's clinic, with indications of stenosis and dyspnea on exertion, the right half of the thorax was a little smaller than the left and did not share equally in the respiration, but the larynx and trachea were intact, the radial pulse equally good on both sides, and heart normal. Radioscopy showed everything normal at first, lungs clear, heart action normal, excursion of the right half of the diaphragm slightly less than normal, but as the patient breathed deep the shadow of the heart vanished from the left side and slid up into the right half of the thorax to the nipple line, until only the apex was left projecting slightly beyond the sternum. Everything returned to normal on extirpation. The right bronchus, in consequence of stenosis, does not allow the lung to inflate equally with the left. The negative pressure in the right lung is therefore greater than in the left, and the mediastinum with the heart is aspirated toward the affected side. This inspiratory dislocation of the mediastinum into the diseased half of the thorax is only possible with movable organs, and adhesions might prevent its occurrence even with pronounced stenosis. Holzknecht suspends the fluorescent screen from a pulley in the ceiling, to manipulate it more conveniently, and obtains accurate pictures for preservation by fastening a glass slide over the screen, and drawing the outlines on this slide, copying them later through a transparent parchment paper adhering to the glass slide by capillary attraction from a little chloroform poured over the glass.

Grece Medicale (Syra), October.

Case of General Sclerodermia. J. FOUSTANOS.—A severe and typical case is here described and the etiology traced to paralysis of the capillary vessels. The circulation is retarded in the extremities most exposed to the cold, and hence the nutritional exchanges are retarded and interfered with, especially in the peripheral strata of tissues. At the same time and as a consequence of the retarding of the local circulation, there is diapedesis of leucocytes and a plastic exudate, especially around the vessels, inducing slight inflammatory edema of the skin, which gradually becomes organized into an interstitial connective tissue, which in turn becomes fibrous, sclerosed, and contracts until the subjacent tissues are compressed to atrophy, and in time the deeper parts. The exacerbations correspond to colder weather, which demonstrates that it is not due to an anatomic alteration of the trophic nerves, on which weather would not have such a decided effect, and which would progress more continuously. Foustanos therefore considers sclerodermia a vasomotor paralysis, its nature the same as symmetric gangrene, i.e., a vasomotor lesion, but by a diametrically opposite action. It is due to vasomotor paralysis, while the gangrene is due to tetanic contraction of the capillaries, and facial hemiatrophy, myxedema or pachydermic cachexia, to purely trophoneurotic lesions. Sclerodermia differs from erythromelalgia—which he designates "mal de Weir Mitchell"—by its dependence on cold; in the latter the attacks and pains occur independently of the cold seasons, and the extremities are warm, while in sclerodermia they are ice cold, and the cutaneous lesions spread to the trunk and face. Erythromelalgia never reached the characteristic sclero-atrophic changes in the fingers noted in sclerodermia.

Pruritus in Syphilitic Dermatoses. G. FILARETOPOULO.—Several instanes are cited to prove that the element of pruritus enters into the clinical picture of syphilitic dermatoses much more often than is generally accepted, and especially in the cases in which the primary accidents were unnoticed or absent. The pruritus is favored by an arthritic, herpetic or nervous constitution.

Gazetta Medica di Roma, September 1.

Peritonitis from Typhoid Ulcer, Cured by Laparotomy. G. FARINA.—The author reviews the thirty-six cases on record of surgical intervention in typhoid perforation-peritonitis, which resulted in recovery in seven, and adds another successful one, bringing the percentage of recovery up to 21.6. The patient was a robust young man with symptoms of peritonitis and collapse occurring after two weeks of typhoid fever. At laparotomy, an opening was found between the superior and inferior peritoneal cavities. It was sutured and a stream of purulent fluid traced to where it issued from a perforation 7 mm. in diameter in the ileum near its junction with the cecum. The patient's condition was so critical that the suturing of the perforation was postponed and the abdominal cavity merely cleansed and packed with gauze. When removed, forty-eight hours later, it was impregnated with the same evil-smelling fluid, and the cavity was rinsed out with a 3 per cent. solution of boric acid, by a siphon arrangement. The gauze packing was renewed daily, but more and more loosely each time, and the patient recovered without further operation, with careful selection of food, and left the hospital in three months—January, 1899—and has carried on his business of baker ever since, in his normal good health.

Quinin Sulphate in Exophthalmic Goiter.

Paulesco agrees with Reynier that exophthalmic goiter is not, properly speaking, a disease of the thyroid gland, says the *Jour. de Med. Interne*, as it is a disease of the blood-vessel system, a vasodilatation, causing cerebral congestion, with an increased activity of the thyroid gland, and other reflex symptoms. In the treatment of this trouble a vasoconstrictor is called for, and one meeting the requirements better than all others, is quinin sulphate. He reports three cases, one in detail; all were greatly benefited by the treatment.

Societies.

COMING MEETINGS.

Western Surgical and Gynecological Association, Des Moines, Iowa, December 27-28.

Oklahoma Medical Association.—The semi-annual meeting of the Association was held at Guthrie, November 23. Oklahoma City will be the next meeting place, May 9 and 10, 1900.

Associated Health Authorities of New Jersey.—The annual meeting convened in Mickleton, N. J., November 27, and the following officers were elected for the ensuing year: president, L. M. Halsey, Williamstown; vice-president, James Hunter, Jr., Westville; secretary and treasurer, T. E. Parker, Woodbury.

Louisville Medico-Chirurgical Society.—The regular meeting of this Society was held December 1. Dr. S. G. Dabney read a paper entitled: "Tuberculosis of the Larynx." The consensus of opinion expressed by those in attendance was that this is an unusually fatal disease; that orthoform and iodoform locally applied give best results, relieving dysphagia and thereby improving nutrition; and that these patients are better off in high, dry climate without medication than in unfavorable climates with medical attention.

Kings County Medical Society.—At a recent meeting of this Society, held in Seattle, Wash., the following resolutions were passed. The editorial referred to has already been reprinted in the JOURNAL (December 2, p. 1443), and editorially noticed (p. 1431):

Resolved, That this Society highly appreciates the earnest editorial on the "Fee of the Doctor," in the October number of the *Ladies Home Journal*, and that it hereby extends a vote of thanks to the editor, Mr. Edward Bok, for his able effort in behalf of our profession. Be it also

Resolved, That this Society hereby expresses its appreciation of the exclusion of all patent medicine and other obnoxious advertisements from the columns of the *Journal*, by a vote of thanks to the Curtis Publishing Company.

Chicago Academy of Medicine.

Oct. 13, 1899.

BILATERAL DERMOID CYST OF THE OVARY.

DR. WILLIAM CUTHBERTSON reported a case of this condition. The interest in the case consists in the comparative rarity of bilateral ovarian dermoids. The patient was a young woman stenographer, 26 years of age, single, of good family and personal history. Her menstrual function, always normal, first made its appearance when she was 14 years old. About a year and a half ago, she began to have pain in her abdomen and back, the backache being the more severe. She was referred to the Doctor last June by Dr. A. E. Mowry of this city, and a diagnosis of ovarian cyst was made. On opening the abdomen both tumors were lying behind the uterus in Douglas' cul-de-sac, the one over the other, and on inspection were found to be dermoid cysts. The right ovary was completely transformed into a cyst, while the left had a small portion of ovarian tissue remaining at its upper part in which was a freshly ruptured Graafian follicle. As there was no way in which to preserve any ovarian tissue, both ovaries were removed; the uterus, not being infected in any way, was left *in situ*.

The patient made an uninterrupted recovery. After she left the hospital she began having symptoms of menopause—not having menstruated since the operation—such as hot flushes, chilly sensations, nervous feelings, etc. Ovarian extract was administered, and at last reports she is very much improved, the climacteric symptoms having greatly abated.

According to Senn (Pathology and Surgical Treatment of Tumors), "a dermoid cyst is a teratoid tumor. It is called 'dermoid' because it contains skin derived from the epiblast by displacement of an embryonal epiblastic matrix, from which during the development of the tumor by proliferation of the skin and its appendages, the principal contents of the tumor are formed. Dermoids of the ovary arise as do dermoids of any other part or organ, from matrices derived from an erratic development in the ovary." This theory has never been satisfactorily proven in regard to ovarian dermoids.

Novy says (JOURNAL, September 2, p. 603) that "dermoid cysts of the ovary form an independent group distinguished histologically and genetically from the dermoid cysts of other portions of the body. Although resembling a teratoma in some respects, it is yet morphologically and genetically distinct, and might be called a cystic rudimentary parasite of the ovary."

F. Munch (*Semaine Med.*, in the JOURNAL, October 7, p. 910) says: The most prominent characteristic of dermoid cysts of the ovaries and testicles, distinguishing them from dermoid cysts occurring elsewhere, is that they are composed of the three layers of the embryo: the ectoderm, endoderm and mesoderm, and suggests as the most expressive name for them "tridermic tumors" as more appropriate than Wilms "rudimentary parasites."

Waldeyer advanced the theory of the parthenogenetic development of dermoid cysts of the ovary. The investigations of B. Novy, Wilms, Kroerner and F. Munch go to support this theory that these tumors develop from the ovum still in the follicle, which is fully matured and has received the impulse to further partially complete segmentation. This process should also be regarded as a pathologic and not a normal one. Bland Sutton holds to the inclusion theory and says: Formed organs such as limbs, vertebræ, long bones or cranial bones do not occur in dermoid cysts of the ovary, the imagination of dissectors sometimes leads them to see in these irregular bony masses maxillæ, mandibles, parietals, etc.; others have found perfect fetuses, but these were calcified intrauterine ones. Such errors, now unpardonable, gave color to the parthenogenetic theory. No one has demonstrated liver, heart, lungs, intestine, kidney, bladder, etc., in these tumors. The investigations of Kroerner and others refute this statement. The tumors I presented contained granular matter, fatty substance and lanugo, the latter still attached to the lining of the cyst cavity.

According to Olshausen, dermoid cysts of the ovary were found in 3.5 per cent. of 3275 ovariotomies. Ponpinel collected forty-four cases in which both ovaries were similarly affected (Senn). The ages at which they are found vary from 2 to over 62 years.

Ovarian dermoid cysts contain fatty material; hair; teeth; bone; nails (Cruvelhier); tongue (Johnstone); brain matter; sebaceous material; true optic vesicles, rudiments of ears, cranial nerves, ganglia, a quite complete medullary tube; we have also the remarkable observation of Kroerner of a sympathetic plexus within the muscular wall of an intestinal tract (JOURNAL, August 19, p. 487).

DERMATONEUROSES FROM THE EXANTHEMATA.

DR. WILLIAM L. RAUM presented this subject. A married woman, 35 years old, American, had a very slight enlargement of the thyroid gland on the left side, ever since she could remember. She was sent to the Cook County Hospital, Aug. 3, 1899, with the following history: A few days before she had a feeling of general prostration followed by vomiting and chills. On entrance to the hospital, the tonsils were found to be greatly swollen, the tongue red and fissured. After a bath the skin was covered with what appeared to be a patchy erythema, especially marked over the trunk and extremities. The color disappeared on pressure. Temperature was 101 F., pulse 120, respirations 28. On the second day her hands became red and swollen. Cultures from the throat showed staphylococcus and streptococci. The urine examination showed a trace of albumin and pus; amount somewhat scanty; no casts. The diagnosis of scarlet fever was made—her son was at the hospital likewise suffering from scarlet fever. August 10, she complained of rheumatic pains, but all traces of albumin had then disappeared from the urine. August 14, she presented decided swelling of the left lobe of the thyroid gland, which later extended to the right. August 19, the swelling of the thyroid assumed such proportions on the left side as to cause dyspnea and dysphasia. The isthmus of the thyroid was about the size of two fingers laid side by side. There was marked edema of the hands and feet, accompanied with decided pain. On account of the temperature, the patient had received, since August 9, daily, 30-grain inunctions of unguentum Credé, but August 19, as the temperature remained almost normal, the ointment was discontinued. The swelling of the thyroid

remained until September 17. There then appeared evidences of fluctuation, and she was transferred to the surgical side, where the swelling was incised and discharged considerable pus. The swelling of the hands subsided very slowly. The Doctor looks on this case, in view of its history, as a neurosis. But once before, in 1400 cases, has he seen the thyroid so affected during scarlet fever.

The present case simulated acute myxedema. The only other case which approached it was that of a boy, 13 years old, who presented enlargement of the thyroid and swelling of the hands and feet, which gradually subsided under ordinary treatment. There was only slight albuminuria in the woman. Examination for casts was made in both cases.

REPORT OF AN ORTHOPEDIC CASE.

DR. JOHN RIDLON reported this case. The patient was a young woman, 18 years of age, and from a healthy family. She developed some stiffness of the right hip, with a little flexion deformity but no pain. Their local physician made a diagnosis of hip-joint disease and marked out the usual course of treatment. The family not being satisfied with the opinion, sought the advice of a practitioner in one of our large cities, who made the diagnosis of dislocation of the hip, on the presence of flexion deformity, shortening and restricted motion in all directions. Manipulation with and without anesthesia was tried, in order to reduce the dislocation, and when the patient became tired of this she had a greater degree of deformity, more sensitive, but no pain.

She then went to a surgeon in another large city, who, because of the flexion deformity and the lack of ability to extend the thigh, made a diagnosis of ovarian disease. The abdomen was opened and the ovary on the right side removed. She was treated for some time, then informed of her recovery, but she still limped and still had flexion deformity.

She next came to Chicago and went to the St. Luke's Hospital, where the house surgeon made a diagnosis of hip-joint disease, but the father, a very careful and shrewd business man, did not wish to abide by the opinion of a young doctor and went to one of the professors of surgery in one of the medical schools of the city. He made the diagnosis of fracture of the neck of the femur, despite the fact that there was no history of injuries, but a slowly progressing deformity with a corresponding increase of all the symptoms then present.

When I saw the patient, there was a flexion deformity of 45 degrees and an adduction one of about 10 degrees. There was a true shortening of 1¼ inches. When the legs were placed side by side, and the measurement was made from the umbilicus, there was an apparent shortening of 3½ inches, and an apparent shortening with adduction and flexion of a little more than five inches. There was no motion of the hip-joint. The father not being satisfied with the diagnosis of tubercular hip-joint disease, an X-ray was taken which showed very clearly that there was no dislocation, but an erosion of the head of the femur about one-quarter of an inch, and erosion of the upper border of the acetabulum of one-half inch.

When considering a case of this kind, one must take into account the question of a fracture of the neck of the femur, a dislocation, osteosarcoma, coxa vara and tubercular hip-joint disease. The dislocation ought to be excluded by the history, although dislocation may take place without any serious accident. Furthermore, traumatic dislocation is always backward and upward and gives a deformity of flexion, adduction and inward rotation. These conditions were absent in this case. The question of fracture of the neck of the femur, although usually confined to fat old women, does occur in men and children and in young people. Fracture of the neck of the femur, however, produces a very characteristic position of adduction, very slight flexion and an outward rotation. These symptoms were wanting. Osteosarcoma could be excluded on account of there being practically no pain, and nothing could be detected by palpation. The differential diagnosis from coxa vara was somewhat more difficult. It usually occurs during adolescence. This girl was 17 years old when her trouble commenced, but this disease goes on slowly for two or three years without any flexion deformity; shortening is the only symptom, and there is no restriction of motion until the shortening has become equivalent to an inch or two. This justified us in excluding coxa vara and led to the diagnosis of tubercular hip-disease. The onset had been slow, the progress slow, there was slight flexion deformity, adduction deformity, and absolutely restricted motion in every direction.

As to treatment, it was most satisfactory. It consisted of immobilization of the hip and lower spine, with a slight degree of traction on the limb. Within two weeks the flexion, and within six the adduction disappeared, and after four months the leg appeared to be one inch longer than the opposite, although it was really three-quarters of an inch shorter. In hip-joint disease the apparent ankylosis is not a true but a false one due to muscular spasm which can be overcome by proper immobilization to the joint. When there has been some destruction of the acetabulum, the head of the femur can in some instances be drawn down to its normal location, and if held there by apparatus, and treated by rest in bed, granulation and healing will take place, the upper border of the acetabulum becoming sufficiently restored to offer firm resistance to the femur. This girl has motion for nearly one-half the normal range in all directions, and never has had a moment's pain. The aspect of treatment in this case is most interesting to the orthopedist, and it seems strange that these eminent men should show such a difference in diagnosis, when the country doctor was able to make a correct diagnosis in the very beginning.

INTERSTITIAL GINGIVITIS.

DR. E. S. TALBOT, in considering this subject, said that interstitial gingivitis is a disease of the gums extending down into the alveolar processes, producing absorption of the bone and expulsion of the teeth. The dentist understands this disease best under the term pyorrhea alveolaris, the practitioner knowing it best as scurvy, lead, mercurial and other poisons. Most people over 25 years of age have this disease to a greater or less extent, and it is more to be afraid of than decay of the teeth. It is absolutely impossible to get specimens of the mouth in various stages of this disease in the human subject, therefore, he spent considerable time looking around among the animals to see whether it was possible to get certain animals in which he could examine the tissues microscopically in order to ascertain how the disease begins and how it progresses. In visiting the dog hospital in this city he found that nearly every dog had the disease, and it gave the opportunity for study. Selecting such cases as were of interest at different stages of the disease, placing the specimens in alcohol, he had them examined by five pathologists of this city. In order to arrive at some conclusion as to the commencement of this disease, he mercurialized a number of dogs, killing them at certain stages, and then examined the tissue microscopically. As shown by photographs, which were presented, the inflammation started in the capillary system of the gum, extending around the border and then up into the deeper layer of the mucous membrane. The enlarged ones showed the different forms of inflammation as it extends into the tissues. They conveyed an idea as to how this disease starts in the gum margin, extending down into the alveolar processes, and the different forms of bone absorption. There are four forms of bone absorption, one, known as halisteresis, begins in the Haversian canals, extending from one to another, until they are involved and the bone is entirely absorbed. Another form is Volkmann's canal absorption. We have, besides the Haversian canal, small capillaries running through the bone, called the vessels of Von Ebner. The third form of absorption is the osteoclastic absorption, and in one specimen, 37 osteoclasts were seen at work.

In connection with this work he made three sections showing the lower incisor and the jawbone intact, and these showed absorption on one side extending downward quite a bit, but, on the other side, little absorption. Pus pockets were seen on both sides. This work extends over four years and embraces the disease from start to finish, from the first inflammation of the gum until the tooth falls out. While this work was being conducted a man died in the Cook County Hospital, with scurvy. Dr. L. Hektoen very kindly procured him a section of the jaw, and Dr. Talbot presented photographs made from microscopic slides showing the diseased condition. In the gum margin a large pocket was seen, which has never before been demonstrated, and will add greatly to the history of the in-

flammation of the gums, because food would collect there starting up an inflammation.

MATERNAL IMPRESSIONS.

DR. JAMES G. KIERNAN, taking this topic for consideration, said that maternal impressions have been considered from one standpoint only, and that is as to their supposed cause and its method of action. As the supposed cause is psychic and—in the conception of it usually adopted—immaterial in action, an absurd credulity respecting its powers which existed at one time among obstetricians has given way to an equally absurd skepticism. The subject has not been discussed by either set of partisans, from a scientific critical standpoint. At the January session of the Academy, the skeptical spirit evinced itself in denial of facts authenticated by embryologists and ornithologists of unblemished repute. The case was further supported by teratologic specimens in the British Museum. Spitzka had his skepticism as to maternal impressions shaken by these specimens, which were newly-hatched chicks with a curved beak like a parrot and the toe set back as in that bird. The hens in the yard where these monstrosities were hatched had been frightened by a female parrot which, having escaped, fluttered among them before the eggs were laid and greatly frightened the hens from whose eggs the malformed chicks were hatched. This would seem at first sight to confirm the photographic theory of maternal impressions. The fact is, however, that these malformations are simply arrests of development. Birds, being aberrant reptiles, belonging to the *Sauropsidae*. During their embryonic development birds pass through a reptilian phase. It was at the end of this phase that the chicks were arrested in development, producing the parrot-like malformation. It is precisely for lack of a logical explanation like this that modern obstetricians are skeptical. In a general way cases reported of maternal impressions may be divided into two classes: 1. Those in which an arrest of embryonic development has occurred, which may or may not be traceable to the alleged impression. 2. Photographic impressions charged to a factor utterly incapable of producing them because of the late period in embryonic life at which the impression is alleged to have acted. Of the cases which he first presented, Dr. K. said: "It presents features which might be a basis for a myth like that of Europa and the Bull, or that of the extravagant antics of Pasiphæ, which produced the Minotaur. Although the physician did not accept the explanation, the gossips of the neighborhood charged the monstrosity to a fright by a bull which occurred at the eighth month of pregnancy. The bull-like face presented in both heads is the result of an arrest of development at a much earlier period. It is obvious that no force could so turn back the clock of embryonic development as to produce in the eighth month of intrauterine life changes which must have been based upon arrests of development established during the first. In the second instance—which is also of a double monster—there would seem to have been indicated possibilities of superfetation. Of this there is no evidence. The condition was charged to a fright during the seventh month of pregnancy at an engraving of a double-headed monster, seen in a traveling show. It is perfectly clear that this fright could have had no influence whatever in the production of the monstrosity. The next case is a cyclops. Cyclopea is the result of arrested development of the later acquired paired eyes and undue development of the middle eye, which ordinarily becomes the pineal body. The condition here found is practically the condition which exists in the provertebrates, like the ascidians. The eye of the ascidian tadpole agrees fundamentally with the type of eyes peculiar to the vertebrates, since the retina is derived from the wall of the brain, and is therefore called myolonic. The pineal body is a remarkable rudimentary structure whose constant presence in all vertebrates forms such an eminently characteristic median outgrowth from the dorsal wall of the brain. The distal extremity of this dilates into a vesicle and becomes separated from the proximal portion. The distal vesicle becomes entirely constricted from the primary pineal outgrowth of the brain. The remote ancestor of the vertebrates had a median unpaired myolonic eye which was subsequently replaced in function by the evolution of the paired eyes. This is shown by study of ascidian and lancelet eyes collated with cyclops and triophthalmos in man, the normal eye and the third eye of reptiles like the hateria of New Zealand. As Daresta has shown, production of a single eye, the changes in the structure of the mouth, the atrophy and the change of normal situation of the olfactory apparatus, and of the vesicle of the hemispheres, result from an arrest of development. The determining influence must be exerted very early in the life history of the embryo. In this case the mother who is a girl of 17, during the eighth month of pregnancy, visited a circus. This was followed by a dream anent animal monsters, and to this dream was ascribed the monstrosity. It is obvious that this dream could have exerted no influence whatever. The last case is one which might have been produced by a maternal shock. The condition of meningocele here presented could have been produced by an alteration of cerebral pressure, which again might result from a disturbance of the maternal blood-pressure, through a shock. The fact that mental shocks can only act on the organization in a purely physical manner is equally ignored by opponents and advocates of the psychic theory of mental impressions. All that is known of mind is known of it as related to purely physical conditions, and it is through pure physical conditions that it must act, whether its action be initiated by conditions affecting physically the various sense organs or not. There is no doubt that the fetus is liable to mental effects from the mother, since as Féré has shown, it often exhibits very decided reaction to sensory impressions on the mother. Women in the midst of an ordinary dream, producing only very moderate excitation, not generally interrupting sleep, are often awakened by fetal movements. These dreams need have nothing of the nightmare which would cause sudden contraction under the influence of a terrifying idea with its resultant cardiac disorder. They may be merely the ordinary phenomena of sleep. Mental changes of the mother hence excite motor reaction in the fetus and, as with sensorial excitations, these reactions are stronger in the fetus than in the mother. The mechanism of these motor reactions is obviously the unconscious and involuntary movement of the uterine walls. Dr. A. Lagorio, some sixteen years ago, brought before the Chicago Medical Society, several cases in which maternal impressions had produced decidedly abnormal births with deformities resembling those feared by the mother. In discussing these I pointed out that they were all instances of checked development, and advanced the opinion that normal shock generally directed played the chief part in maternal impressions through checking development and causing either general or local reversion. Here the statistic method can be applied. Of 92 children born in Paris during its last siege, 64 had slight mental or physical anomalies. The remaining 28 were all weakly; 21 were imbecile or idiotic, and 8 were morally insane. These figures of Legrand du Saulle justify the characterization by the working class of Paris of children born in 1871 as "doomed children." In Berlin the financial crisis of 1875-80 was followed by an increase in the number of idiots born. It must be remembered that profound mental shock can alter nutrition so that the mother shall furnish poisonous products in lieu of nutriment. That such poisonous products would tend to check fetal development no one will deny. While rejecting the photographic phase of maternal impressions it must be admitted that there exists a class of cases showing arrested development which is due to the effects of mental shock upon the mother. In the light of the discoveries anent the neuron the absence of neural connection between mother and fetus has not its former significance.

N. Y. County Medical Association.

TONSILS AS PORTALS OF INFECTION.

DR. EMIL MAYER'S paper with this title was printed in the JOURNAL of Dec. 2.

DR. ISAAC ADLER opened the discussion, with a consideration of general infection. He stated that it had been conclusively demonstrated that there is a direct interchange between the surface of the tonsils and the lymph current, and it is also well known that the tonsillar crypts are favorite breeding-places for many kinds of bacteria, particularly the staphylococci and the streptococci. He deplored the tendency of many in the medical profession to still adhere to the notion that there is a distinct relation between inflammation of the tonsils and articular and muscular rheumatism, for there is every reason to believe that rheumatism, of whatever variety, is an

infection dependent on the introduction into the system of attenuated pyogenic bacteria, notably the staphylococcei and the streptococci. This would explain the common clinical experience of an attack of severe rheumatism being ushered in by a tonsillitis. It is especially important to rid ourselves of the idea that a rheumatic endocarditis might be the result of a diathesis, such as gout, and to accept the view that it is simply the result of an infection of the valves of the heart by the staphylococcus or the streptococcus. Myocarditis may be similarly produced—in other words, it may occur as a result of a tonsillar infection. Personally, he believes that the case mentioned by Dr. Mayer as an endocarditis following tonsillar inflammation was in reality an acute myocarditis. He would most emphatically indorse the position taken by Dr. Mayer regarding the treatment of the tonsils, viz.: that inflamed tonsils are a source of danger to the individual possessing them, and that recurrrent tonsillitis constitutes a positive indication for ablation of the tonsils.

DR. FREDERICK A. PACKARD, Philadelphia, discussed endocardial infection arising from the tonsils, and cited five cases in support of this view. Five of these had already been reported elsewhere. His first case of this kind was in December, 1893, in a boy whose heart he had frequently examined, and with whose personal and family history he was familiar. When first seen, he had had a tonsillitis, but the next day a loud, rough systolic murmur was audible, and this murmur was present as long as two years afterward, though the attack of tonsillitis had been recovered from in a few days. This boy never exhibited the slightest evidence of rheumatism. The second case was that of a girl of 13 who, in a previous attack of erythematous angina, suffered from a curious tachycardia, but exhibited no definite evidence of cardiac disease until the occurrence of another attack of angina about one year later. On the second day of this second illness there was developed a loud, harsh, systolic murmur at the apex, and transmitted to the left of the axillary line. This was in 1895, and the murmur is still present. Again, a man, 32 years of age, when first seen had been suffering from an attack of angina, and two murmurs had been audible over the heart. When next seen, a year or two later, he presented every evidence of cardiac dilatation and loss of compensation. Last winter, also, one of the nurses in the hospital, during an attack of severe streptococcus angina, developed a blowing murmur at the apex of the heart. Her family physician informed him quite recently that she now exhibits evidence of failing compensation.

DR. FRANCIS J. QUINLAN emphasized the dangers to which an individual is exposed by retaining tonsils which are the seat of either acute or chronic inflammation, and reminded his hearers that this very year the Association lost one of its members as the result of an infection that had its origin in an inflammation of the tonsil.

DR. M. C. O'BRIEN followed out much the same line of argument, calling attention also to the frequency with which persons are dosed with quinin, for a supposed malaria, when even a casual inspection of the tonsils would have given the physician the key to the true situation.

DR. S. S. JONES commented on the not infrequent occurrence of sudden death in connection with tonsillitis, and endeavored to explain it on the supposition that either the heart muscle or the pneumogastric nerve had been suddenly overwhelmed by the intensity of the infection arising in the tonsils.

DR. W. FREUDENTHAL thought too much stress had been placed on the tonsils as the primary seat of infection; certainly the tonsils are very rarely the portals of tubercular infection. He is convinced that the retropharynx is much more commonly the seat of tubercular and other infections than the tonsils.

DR. EMIL MAYER, in closing the discussion, said that in the case reported by him he had merely given the diagnosis of the attending physician, but personally he too felt that the case had been rather one of myocarditis than of endocarditis. A most important point to remember is that it is not enough to merely remove a slice from the tonsils; they must either be gouged out, or tonsillectomy must be done.

EARLY RECOGNITION OF PULMONARY TUBERCULOSIS.

DR. S. A. KNOPF read a paper on this subject, printed in this week's JOURNAL.

DR. WILLIAM H. THOMSON directed attention to tuberculosis not infrequently remaining latent for periods of five, ten or more years. The results of physical exploration of the chest are notoriously uncertain, and, in his own practice, he has come to place great reliance on the specific form of emaciation peculiar to pulmonary tuberculosis. Its chief features are the thinning and flattening of the shafts of the long bones, and the wasting away of the muscles until they are reduced to mere ribbons.

DR. WILLIAM H. KATZENBACH said that most probably the emaciation observed in cases of tuberculosis is often largely due to the absorption of toxins. While this wasting away is sufficiently characteristic of the disease, it does not usually become evident until the disease is so far advanced that there is but little difficulty in making the diagnosis from the other signs and symptoms. A common error is to overlook the early indications of a pulmonary tuberculosis developing in an alcoholic subject, because such persons so commonly have a slight cough. When considering the early diagnosis it is well to make careful inquiry into the patient's environment, occupation and general habits of life. While the changes in the body temperature are very moderate in many incipient cases, thermometric observations should be systematically made, as even slight variations from the normal are significant. The nature of an attack of hemoptysis is often puzzling. A very common cause is heart disease, and this should always be excluded before assuming that the hemorrhage is the result of a tubercular process in the lungs. When making the physical examination of a person suspected to have beginning pulmonary tuberculosis, the examiner should stand behind the patient and place his thumb on the scapula and the fingers under the clavicle, and, while making firm pressure, instruct the patient to take a deep inspiration. If this respiratory movement causes pain on one side, it is quite probable that on that side the lung will be found diseased. Slight pulmonary consolidation at the apex may also be indicated by an abnormal conduction of the heart sounds in this region.

DR. ALEXANDER LAMBERT said that he had been impressed with the exceedingly slight tubercular lesions that would, in some instances, give rise to the characteristic reaction with tuberculin, but this very fact tends to restrict the sphere of usefulness of the test, as it fails to give any hint of the extent or severity of the tubercular lesion. The subnormal temperature and the subfebrile temperature in the evening are very suspicious of incipient tuberculosis. Some years ago his attention was incidentally called to a peculiar vibration in the chest, noticed by a man whenever humming a tune, and physical examination revealed a tubercular process at that point, but at the time it had not occurred to him to attach to this sign any special diagnostic value. As to the agglutination reaction, while he has watched the experiments at the laboratory of the New York Health Department, they have only served to impress him with the worthlessness of the test.

DR. HERMANN M. BIGGS seemed to think that physicians ought not to experience great difficulty in making an early diagnosis of pulmonary tuberculosis if they would only make good use of the diagnostic aids known to medical science. It is an interesting fact that, in a large number of autopsies made on pauper patients, spontaneously healed tubercular lesions have been found in about 60 per cent. of the cases, showing what Nature can and did do even under very unfavorable circumstances. He has found tuberculin at times useful in establishing the diagnosis. Koch used it in many thousand cases in Berlin—indeed, it has been the custom to apply this test to every person, at the Pathological Institute, who does not show good evidence of having this disease. The practice has been to begin with a dose of 1 mg., and subsequently, at intervals of about five days, to give first 2 and then 5 mg. If, after all this, the characteristic reaction does not make its appearance, it is certain that tuberculosis can be excluded.

DR. JOHN BLAKE WHITE was pleased to note that Dr. Knopf places the examination of the sputum for tubercle bacilli in a position subordinate to the symptoms and physical signs. He has no faith in the tuberculin test, and, from experiments conducted by him some years ago, feels quite certain that a similar reaction can be evoked by the injection of various chemicals into the circulation.

Orleans Parish Medical Society.

New Orleans, La., Oct. 14, 1899.

OCCLUDED NARIS.

DR. O. JOACHIM presented a case of congenital bony occlusion of the right posterior naris. The patient, a white boy about 8 years of age, was brought to the Charity Hospital with a history of inability to blow that side of his nose. Examination excluded adenoids. The diagnosis was established by the use of the probe, the Politzer bag, and by digital examination; this last showed the occluding bone to be not flat but grooved so that a finger could be fitted to the depression. The indication is to break through the bony partition. This is readily done. It is not so easy, however, to keep the opening patulous, as the tendency to occlusion persists. This the Doctor had found to be the case in a female patient first operated on two years and again one year ago.

DR. GORDON KING remarked on the unilateral character of the occlusion; it was his impression that the condition is usually bilateral.

DR. JOACHIM, answering, stated that the cases seen by him had all been unilateral.

MASTOID DISEASE.

DR. JOACHIM made a preliminary report of a case of this affection in a white man 20 odd years of age. There existed as complications cerebellar abscess and pyophlebitis of the lateral sinus extending down into the jugular vein. The abscess was emptied, the sinus incised and its contents evacuated; finally the jugular vein was tied at the lower third of the neck and incised above the point of ligature. Iodoform gauze packing was practiced. Dr. Joachim promised to report the case in full when terminated; at the time of report the condition was favorable.

FEBRIS FLAVA.

DR. GEORGE S. BEL reported a number of cases simulating febris flava, clinically, yet presenting plasmodia in the blood and yielding only to persistent administration of quinin. Out of thirty-six cases only one had died.

THYROID EXTRACT IN UTERINE FIBROMA.

DR. C. JEFF MILLER reported four cases of uterine fibroma treated with this extract, given in tablets of 1 to 5 grains three times daily: two cases had been benefited, while in the other two no improvement had been observed.

TROCAR-CANULA IN RECTOVESICAL WALL.

DR. HERMAN B. GESSNER exhibited a curved trocar-canula removed by him from the rectovesical wall of a negro. This had been introduced for the relief of urinary retention due to impermeable stricture of the urethra, by a physician in a neighboring town. On the eighth day after the introduction, external urethrotomy was done by the method of Wheelhouse and the canula removed. No evil effect followed this prolonged retention of the canula, the case convalescing uninterruptedly.

UMBILICAL HERNIA.

DRS. R. J. MAINEGRA and E. H. WALET reported a case of congenital umbilical hernia in a child delivered with forceps from a primiparous eclamptic. The distended cord—four inches in diameter—was ligated beyond the hernial sac. The latter was then reduced, after which it was twisted and ligated. Twisting and ligation of the sac at successively higher levels had been practiced until the hernial opening had been reached. This last appeared to be closing completely and firmly.

New Orleans, La., Nov. 11, 1899.

HYSTERIC DEAF-MUTISM.

DR. GORDON KING brought before the society a patient that had been presented two weeks previously, suffering from hysteric deaf-mutism. A week before the first meeting the patient, a young man, had attended a spiritualist meeting. The medium suggested that the spirit of a certain physician, who had died some time before, should move him to write a prescription for the sister of one of those present. The patient had felt "moved," had then become frightened and gone home. He was much disturbed, finally losing consciousness, to which he was restored by his family physician. Since that time he has been a deafmute, communicating only by means of writing. The use of electricity, hypnotic suggestion and strychnin sulphate—1/30 gr. up to five times daily—was resorted to without avail. Finally Dr. King succeeded in bringing back phonation by taking away the patient's pencil and urging him—in writing—to make efforts to speak. At first the lips did no more than tremble; but in the course of a half hour he could whisper. Next morning he came and talked freely, explaining that he had continued to try at home and had finally succeeded. His hearing was still to be restored. The use of the auto-masseur was resorted to, with some little effect, causing the patient to hear a faint buzzing sound. The cure, however, was completed by the use of a simple ear-trumpet The tip was put in the patient's left ear and the Doctor yelled in the trumpet; the patient jumped. He claimed that he had not heard, but finally admitted that he had. Within a half hour he could hear even a whisper on that side. The other seemed unaffected, not even a tuning-fork placed on the vertex being heard. The repetition of the ear-trumpet procedure on the following day caused a return of the hearing in this ear also. Dr. King stated that the combination of deafness and mutism in this case was particularly interesting, as it is quite uncommon, while hysteric deafness, especially partial, is quite common.

DR. O. JOACHIM suggested calling the case nervous rather than hysteric. As to the method of treatment, no one is applicable to all. In one case of nervous aphonia seen by him, the introduction of the mirror into the throat caused the man to speak again.

DR. KING acknowledged that the term "nervous" is more applicable than "hysteric" to these cases. As to treatment, he had seen reported, in the *Annales de Laryngologie*, the cases of two men troubled with complete nervous deafness, cured by catheterization of the Eustachian tubes. They were first well impressed with the fact that this would cure them. Improvement was manifest from the start, but repetition of the procedure was necessary to effect a complete cure.

San Francisco County Medical Society.

Meeting for October.

MULTIPLE UTERINE FIBROMATA.

DR. S. I. HARRISON reported the history of a patient he had recently operated on, and exhibited the tumor removed. He also discussed the various methods of dealing with the condition of uterine fibromata. The tumor occupied practically the entire pelvis, and the differential diagnosis between fibroid and carcinoma was difficult. The fibroid mass had involved the whole of the uterus with the exception of the cervix, which alone was allowed to remain.

DR. E. E. KELLY had seen the patient with Dr. Harrison and helped him operate. Without an anesthetic it was quite impossible to determine whether or not the mass was a fibroid or a cancer. There had been no hemorrhage from the uterus to speak of. Aside from the presence of the tumor mass, there were only the symptoms of dysmenorrhea and nausea, which might be as well produced by a sarcomatous growth as by a fibroid. The right ovary was attached to the fibroid tissue, but was not entirely degenerated; a portion of healthy ovary was allowed to remain. The left ovary was removed on account of total degeneration.

SANITARY CONDITION OF CAMPS ABOUT SAN FRANCISCO.

DR. C. R. GREENLEAF, Colonel and Medical Inspector, U.S.A., presented this topic. JOURNAL, November 25, ¶ 113, p. 1352.

COLLATERAL CONSIDERATION RELATING TO APPENDICITIS.

DR. THOS. W. HUNTINGTON said that many cases of appendicitis of the semichronic form should be diagnosed and operated on very much earlier than is the case. He cited a number of cases, for example, a doctor who had more or less pain in the right side of the abdomen for some six or eight years, but thought nothing of it. He suddenly developed grave symptoms, was brought to the city, operated on and a large amount of pus found in the vicinity of a gangrenous appendix. He will probably die, whereas if he had been operated on long before, he would have been a well man. The fault is not by any means with the general practitioner alone; the surgeon is quite as much to blame for not making the diagnosis in these cases, and for not operating on them immedi-

ately. His conclusions are : 1. Obscure gastric or enteric symptoms, such as habitual constipation, and occasional abdominal pains, either localized or fugitive, should be given careful consideration before disease of the appendix can be excluded. 2. A diseased appendix is a serious menace to the patient, aside from the possibility of ultimate explosion and infection. 3. Early operation in chronic appendicitis should be as strongly urged in the mild as in the more formidable cases. 4. Whenever the presence of adhesions has been detected during operation, thorough exploration of the general cavity should be made to avoid the necessity of a secondary operation for their relief.

Philadelphia County Medical Society.

Nov. 8, 1899.

APPENDICITIS AND ITS GREAT MORTALITY.

DR. MORDECAI PRICE read a paper with this title. He thinks medical treatment will not cure genuine appendicitis, which is purely a surgical affection. Certain symptoms frequently simulate appendicitis. He detailed a case in which a boy had suffered from a kick in the abdomen, and for a while the question was hard to determine until a large amount of scybalous masses were discharged from the bowel. The symptoms can only be determined on by an experienced practitioner. In appendicitis high temperature is rare, and is only present in acute cases. In operating he begins by making an incision through the abdominal wall, parallel to the crest of the ileum. The incision should not be made larger than necessary, and generally one from 1½ to 2 inches in length suffices. He amputates the appendix about ¾ of an inch from the head of the colon, or inverts it, and afterward closes with silk thread. In cases in which the appendicitis is due to hard fecal concretions, simple drainage suffices to cure. The wound should drain from the bottom. He uses irrigation and believes it essential. Frequently from two to three pitchers of warm water or normal salt solution are required. There should be no rubbing nor curetting of the intestine. The high mortality is due to either ignorance on the part of the operator or negligence of the patient. As to the after-treatment, the external dressing should be removed twice daily in septic cases with much discharge. In all these plenty of gauze should be inserted for drainage. In his series of over 100 cases only one hernia had occurred.

DR. T. E. ASHTON agreed with the speaker for the most part. He believes the high mortality is due to faulty diagnosis, and at the present time the most important thing is the study of the diagnosis. As to temperature, this disease has none which might be called typical. As to flushing the abdomen with warm water or saline solution, he long ago ceased that on account of the danger of spreading the septic process. At the present time the generally established technic is a good one. The high rate of mortality is due to delayed operation and results from septic peritonitis.

DR. BRINKMAN had seen fecal fistula result from leaving the stump of an appendix. In three cases in which the stump had been left, subsequent attacks of appendicitis had occurred. In removing the septic material he resorts to swabbing rather than to flushing.

DR. A. J. DOWNES thought that Dr. Ashton had given the keynote to the proper treatment.

DR. S. SOLIS-COHN dissented from the views of the different speakers as to operating in all cases in which the diagnosis of appendicitis had been established. He knew of instances in which consultants had agreed to postpone an operation and had no reason to regret such action in any of these. He had seen cases which simulated typhoid fever, and an operation in these would undoubtedly have done harm.

DR. PRICE, in closing, said that half the battle is fought in this disease when the diagnosis is made. He recently examined into the mortality of appendicitis and compared the results outside with those attained in Philadelphia. Taking the mortality exclusive of that in Philadelphia, it was as high as 20 per cent., while here it was only from 8.5 to 20 per cent. This low mortality he attributes to proper technic and care in the after-treatment.

Johns Hopkins Hospital Medical Society.

Baltimore, Md., Nov. 6, 1899.

Dr. Harry Thomas was elected president and Dr. Thomas S. Cullen, secretary.

ANEURYSM TREATED BY ELECTROLYSIS.

DR. GUY HUNNER presented a paper on the treatment of aortic aneurysm by the introduction of wire into the sac, and electrolysis. A table showing the results of treatment in some thirty-six cases, all so far reported, showed that a number of cures had been effected. The method was considered to offer the best prospect of benefit in this almost hopeless disease under the Tuffnell or any other treatment.

DR. FINNEY exhibited a patient recently operated on in this manner, with evidences of improvement and consolidation, and the patient expressed himself as feeling much more comfortable. A specimen was shown from a patient previously operated on, in whom the sac was filled with a firm layer of fibrin in which the wire was embedded.

CHARACTERISTICS OF POISONOUS SERPENTS.

DR. HOWARD A. KELLY delivered a lecture on the characteristics by which the poisonous serpents of this country can be distinguished. He said it was very important that physicians should learn how to distinguish these harmful varieties from the non-poisonous. Most of the reptiles are harmless and some highly useful by their destruction of the poisonous varieties. One for instance is the most deadly enemy of the rattlesnake, crunching it to death between its folds; it kills far more than men. Many harmless snakes are considered poisonous. There are only four genera of the poisonous kind. The address was illustrated by the exhibition of many of the living reptiles, which were brought to the room in canvas bags and handled with perfect *sang froid* by the lecturer. One was a vicious rattlesnake with a dozen or more rattles. Controlling its movements by means of a cane, Dr. Kelly seized it by the neck and demonstrated ocularly and by means of extempore drawings on the black-board, while the reptile was wriggling and rattling in mid-air. Moccasins and copperheads were also taken out and exhibited in the same manner. The lecture will be published in full, with illustrations, in the *Bulletin of the Johns Hopkins Hospital*, and will be a most valuable contribution to the subject, being accompanied, as it will be, by a paper giving a full account of the investigations into the nature of snake poison and the serum treatment of small bites, by Dr. Thomas R. Brown.

St. Louis Academy of Medical and Surgical Sciences.

Nov. 14, 1899.

SEWER GAS IN ITS RELATION TO ENTERIC FEVER.

DR. O. L. SUGGETT, in his paper on this subject, advanced the theory that the present epidemic of typhoid fever in St. Louis might be due in part to inhalation of sewer gas. He reported five cases in which he had found leaks in the plumbing of the house, and could find no other reason for the breaking out of the disease.

DR. E. LANPHEAR was not willing to concede that sewer gas has anything to do with the dissemination of typhoid fever. He cited the cases in Paris where men digging in trenches were constantly exposed to the so-called sewer gas and not one suffered from typhoid. Again, he said that typhoid fever is not an air-borne disease, that it has not been proved that typhoid bacilli are carried in the air, and that therefore it could not be that the disease in its dissemination is affected either pro or con by the presence of sewer gas.

DR. R. B. H. GRADWOHL endorsed the views of Dr. Lanphear and that the typhoid bacillus is a micro-organism which does not live in the air, but its normal habitat is water polluted with the alvine discharges from typhoid fever patients or milk contaminated by being placed in receptacles previously washed with typhoid-contaminated water. He called attention to the epidemics of enteric fever in medical history, notably those in Lausanne, Switzerland, Plymouth, Pennsylvania, etc., and said that in nearly every instance he had ever heard of, the epidemic could clearly be traced to polluted water or milk supplies. He believes that the present epidemic in St. Louis is probably due to polluted water or milk supply. He was not ready to explain just why the epidemic was confined to the

western portion of the city, but advanced the suggestion that the milk in that part was supplied by one dairy or that the sewerage in that part might be contaminating the water-supply.

BACILLUS TYPHOSUS AND HEPATIC ABSCESS.

DR. R. B. H. GRADWOHL read a paper on "The Rôle Enacted by the Bacillus Typhosus in the Causation of Hepatic Abscess, with Report of a Case." He took up the hepatic complications of typhoid fever, with a review of the cases of cholecystitis, cholelithiasis, etc., in which the bacteriologic demonstration of the bacillus typhosus had been made. He narrated the case of a man who had been brought to the St. Louis City Hospital, with hepatic abscess, and in the pus of this recovered the bacillus typhosus in pure culture. The history of the patient showed that he had had an attack of typhoid six years before. The post-mortem and bacteriologic reports were appended.

DR. R. E. WILSON cited a case of cholecystitis which was under his observation some time ago, in which the bacillus typhosus was isolated, also one of gall-stones, in which the bacillus must have enacted a rôle, since the attack of gall-stone colic began a short time after an attack of enteric fever.

DR. J. L. BOEHM narrated some of the clinical features of the case reported by Dr. Gradwohl. He called attention to the difficulty of making a diagnosis in abscess of the liver, because of the obscure clinical symptoms.

Cincinnati Academy of Medicine.

Nov. 20, 1899,

KNIFE-BLADE IMBEDDED IN ORBITAL TISSUES FOR THIRTY-TWO YEARS.

DR. C. R. HOLMES presented a patient, who, at the age of 12, while running, fell, cutting his left cheek, with a cut over the lower lid, the globe swollen and injected and a beginning ulcer attendant. About three weeks afterward a little whitish mass presented in the wound and was removed with forceps. This was probably a part of the inferior cartilage. The lower lid became turned in toward the eyeball so that the globe was considerably exposed. He succeeded in passing through the intervening time without much discomfort; only recently, indeed, has he suffered any distress. When first examined by Dr. Holmes, ten days ago, there was marked hyperemia of the lower lid, the globe swollen and injected and a beginning ulcer of the cornea. It was supposed that there was necrosis of the orbit, and it was determined to remove the dead bone. On making the incision and probing, a foreign body was discovered and removed with a pair of hemostatic forceps. The body proved to be a knife-blade 1½ inches long and three-eighths of an inch wide. The patient remembered then that at the time of his accident he had had an open knife in his hand. In the excitement of the accident and subsequent treatment this fact had been forgotten. While the patient was under the anesthetic the inversion of the lower lid was corrected, and at the time of the presentation of the patient was practically normal.

VERTEBRAL ARTERY INJURED BY BULLET.

DR. A. I. CARSON presented a specimen of a portion of the cervical vertebræ with the vertebral artery, removed from a man who had been shot from a distance of about three feet, with a thirty-two caliber ball. The ball knocked off a portion of the lower middle incisor tooth, traversed the tongue (coming out just above the epiglottis), went through the esophagus, furrowed the body of the vertebræ and eroded the vertebral artery. The man was unable to swallow or speak for some time. A few days afterward, at about midnight, the interne was called and found the patient bleeding from some point in the mouth, which could not be located. The bleeding was readily controlled. About three hours later another call was made, but the man died just as the interne entered the ward. The patient died in about three minutes. In the specimen could be readily seen the small opening from which the hemorrhage took place. This case is in contradistinction to one presented by Dr. Carson about three months ago, in which the innominate artery had been severed for three-fourths of its caliber, and yet the patient lived two hours.

Toronto Clinical Society.

Nov. 1, 1899.

SPINA BIFIDA.

DR. GEORGE A. BINGHAM, president, delivered an address on this subject. He gave a summary of eight cases, seven occurring in children and one in an adult, in which operative measures had proven successful in 75 per cent. This he thought compared favorably with the London Clinical Society's mortality of 38 per cent., in treatment by Morton's method. So far the results of the recoveries have been permanent.

PATHOLOGIC SPECIMEN OF APPENDIX VERMIFORMIS.

DR. F. LEM. GRASETT exhibited this specimen, which showed a remarkably thickened wall, and stated that the case had one element of interest, in that he had operated within thirty-two hours from the initial pain—the earliest operation he had ever performed for appendicitis. There was a solid mass of inflammatory adhesions surrounding the appendix, which came out *en masse*, leaving a cavity lined with lymph; there was no pus. The patient made an uninterrupted recovery. No foreign body whatever was found in the organ.

DR. A. A. MACDONALD asked for the remote results in these cases, and the bearing of appendicitis on life insurance. Although sufficient time had not probably elapsed as yet to gather data to form a basis for refusing these candidates, he thought it might be well to have an expression of opinion on the subject from the fellows. It transpired that some would insure immediately after the operation for appendectomy, i. e., after the patient had recovered from the results of the operation; others thought it would be better to wait a period of two years; while others thought a man without an appendix was a better risk than one with the organ intact.

NASOPHARYNGEAL POLYPUS.

DR. D. J. GIBB-WISHART, by invitation, presented the patient, a boy of 8 years, and the pathologic specimen. The growth projected into the pharynx and, on being removed under chloroform, turned out to be a mucofibrous polypus, measuring about 3½ inches in length. Ten days after the operation, there was a little pain in the left ear and a rise of temperature to 104 F. The drum membrane was punctured and pus exuded. Tenderness and swelling in the glands of the neck along the edge of the sternomastoid on that side were noted within twenty-six hours, followed by the same condition on the right side. There was a gradual subsidence of all symptoms; and ultimate recovery. These cases are comparatively rare, especially so under 15 years of age. The polypus was attached to the middle turbinate bone, about the usual situation.

RESULT OF OPERATION FOR JACKSONIAN EPILEPSY.

DR. D. C. MEYERS recited the history of this case. He had presented the patient in person to the Society, last January. He was a farmer aged 23. At 5 years of age he was struck on the head by a club falling out of a tree, and was dazed, but there was no loss of consciousness and no depression of the skull. The aura occurred in the forearm, and the patient could give a voluntary exhibition of bringing on an attack and suspending it by seizing the offending member with the right hand. Spasms would last about thirty seconds; and he would have as many as thirty attacks in a day. Dr. Grasett, assisted by Dr. Peters, trephined at the instance of Dr. Meyers, on January 20. The center was reached just in front of the fissure of Rolando, about two inches below the longitudinal fissure. The dura was healthy, with two large veins running across it. There was no bulging. Electricity was applied with very satisfactory results. A probe three-eighths of an inch in diameter was inserted a distance of 1½ inches into the brain substance without any ill effects. A portion of the center was excised; the dura was not stitched and the plate of bone was not replaced. Subsequently, on the day of the operation he had several attacks, and on the next day the spasms were confined entirely to the paralyzed muscles. After five weeks, the attacks were considerably lessened; and he has the use of his arm for all practical purposes, though some paralysis remains in parts of the hand. Six weeks ago the fits entirely ceased, and he now uses the left arm free for all purposes. He has gained about 20 pounds in weight, feels perfectly well and has not taken any medicine for five months.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance $5.00
Foreign Postage 2.00
Single Copies . . . . . 10 Cents

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SATURDAY, DECEMBER 9, 1899.

THE ARMY MEDICAL DEPARTMENT.

Last year the medical officers of the army made an effort to have their corps enlarged to correspond with the increase of the military forces. They represented the insufficiency of 192 officers, the legal membership of their corps, to perform the various duties connected with the sanitation and care of the army, which at that time required 700 volunteer officers and surgeons on contract in addition to the regular medical force. They represented also that all the other staff corps had a larger percentage of officers of the higher grades than the medical staff, and petitioned for rank commensurate with their responsibilities. But the national legislative body appeared to think that so long as physicians and surgeons could be had in emergencies under contract there was no need to increase the membership and rank of the army medical department. Professional ability may be obtained under contract, particularly when the circumstances of the time have a tendency to rouse the patriotism of the country, but a familiarity with military methods and sanitary administration can not be so readily obtained. The medical profession recognizes that a medical department which barely sufficed for a standing army of 25,000 men in time of peace can not be expected to control the insanitary environments of a hastily raised army of over 100,000 men on active service, and liable to attack from epidemic disease. The medical history of our volunteer regiments in the camps in Georgia, Virginia and Florida, in 1898, demonstrates the accuracy of these views.

Surgeon-General Sternberg has, without loss of time, renewed the effort to place his department in a condition to meet the emergencies of the future by requesting the Secretary of War to urge before Congress his views of what is needful to strengthen the medical corps. The text of the bills which he desires to have passed by Congress is given in another part of this issue of the JOURNAL. He asks for an increase of 4 colonels, 10 lieutenant-colonels, 30 majors and 80 assistant-surgeons with the rank of captain and lieutenant, according to length of service. When strengthened even to this point, the medical department will require reinforcement by surgeons on contract. With the 192 officers now in the service the increase called for by the bill would give a total membership of 316, or only a few more medical men than are now serving in the Philippines. There are at present in those islands 52 regular medical officers, 23 surgeons of volunteers, 75 regimental medical officers and 157 surgeons on contract, a total of 307. The contract surgeons now in the service have had much experience, and among them are many who would be most desirable acquisitions to the medical corps. The Surgeon-General evidently considers it just and proper that they and the medical officers of volunteer regiments should have a way opened to them to obtain commissions in the regular army. Able men can not afford to remain indefinitely under a contract which affords no prospect of advancement.

Two other bills have been submitted by Surgeon-General Sternberg. One is for the relief of assistant-surgeons with the rank of captain in the volunteer army. The act of Congress, approved March 2, 1899, for increasing the efficiency of the army, provided three medical officers for each regiment, with the rank respectively of major, captain and first lieutenant; but the Comptroller of the Treasury ruled that officers commissioned as captain could draw the pay only of a first lieutenant in the medical department. Legislation is needful to remedy this anomalous condition. The other bill is intended to enable contract surgeons to recover pay for periods of leave of absence on account of sickness incurred in the line of duty. The Army Regulations of 1889 prescribe that "an acting assistant-surgeon is not entitled to pay when absent on leave, whether on account of sickness or otherwise." This involves a manifest injustice to many physicians who suffered from typhoid fever or other enervating diseases and required a leave of absence for recuperation. If a surgeon on contract at the present time should break down in health from exposure in the Philippines, a leave of absence granted him with a view to promote recovery would have to be purchased at the price of his salary.

The earnest support of every member of the ASSOCIATION should be given to these bills for the improvement of the army medical department.

AT A recent meeting of farmers, dairymen and the Illinois State Board of Agriculture, held in Chicago, an organization was formed for the purpose of advocating a revision of the laws passed by the last legislature relative to the eradication of tuberculosis in cattle.

BIOLOGY OF BACILLUS TUBERCULOSIS.

Alfred Pettersson[1] points out that there are no less than seven organisms which more or less resemble the tubercle bacillus, and which may produce changes in the guinea-pig, which microscopically bear considerable likeness to tuberculosis. These organisms are: Petri's, also Rabinowitsch's butter bacillus, the three bacilli isolated by Moeller from timothy, vegetable dust and dung, the bacillus isolated by Moeller from the spleen of a lizard inoculated with tuberculosis sputum, the one which Czaplewski found in gonorrheal pus, and the branched organism which Korn[2] isolated from butter. Under Hueppe's directions Pettersson studied the morphologic and cultural peculiarities of the first five organisms. Of these five Moeller's timothy bacillus and dung bacillus are even more acid proof than tubercle bacillus, while the other three are more easily decolorized. Branching forms were observed in connection with all; club-shaped thickenings and true-branching occur in young luxuriant cultures—a fact which speaks against the degenerative nature of these appearances, as has been urged by Gunther and by Fischer.

Glycerin favors the growth in all media; in fluid media, surface films are generally formed; none of the bacilli liquefy gelatin; the dry crumbling form of growth of the tubercle bacillus is best seen in Rabinowitsch's butter bacillus. The variations in the appearances of the cultures are rather insignificant. The timothy and dung bacilli were found to grow well at a temperature of from 45 to 50 C.; the lizard bacillus grows best at room temperature. Pettersson could not convince himself that the bacilli isolated from butter, by Petri and Rabinowitsch, are identical, as claimed by these investigators. Korn's bacillus closely resembles Rabinowitsch's. Petri's butter bacillus and Moeller's grass bacillus No. 2 are probably identical. If this be true, the source of the contamination of the butter, namely from grass and vegetable dust, would seem to be established. Moeller's timothy bacillus and his dung bacillus are also regarded as identical. The various organisms occasionally caused miliary and submiliary nodules in the guinea-pig, but most often the inoculations were without any effect. The importance of these organisms in the diagnosis of tubercle bacilli is to be emphasized, but their greatest importance lies in the fact that their discovery has furthered our knowledge of the developmental history of this important pathogenic agent, which is now generally regarded as a parasitic adaptation form. The botanic relation of the acid-proof bacilli to the ray fungi is recognized by Pettersson. The possibility that genuine tuberculosis may be acquired "miasmatically" is denied by this author, the disease being at the present time acquired only through contagion by way of disease products. The acid-proof organisms of Moeller and others are saprophytes and facultative parasites; the ray fungi include both parasitic and purely saprophytic forms, the facultative parasitic forms being in some cases acid-proof; living tubercle bacilli have as yet been found only in the parasitic stage, but saprophytic growth is easily accomplished by cultural methods; the bacillus of leprosy exists only as a parasite, and saprophytic growth has not as yet been attained. All these organisms are characterized in greater or less degree by producing nodules; furthermore, by responding to the influence of living tissue by forming clubs and radiating foci. In the future it is probable that further evidence of their mutual relationship will be adduced. It is of great biologic interest to note that the members of a closely related group of fungi in many instances under parasitic conditions present themselves in such morphologic forms that they were at first regarded as bacteria; in this group we find, as pointed out, all transitions from pure to facultative parasites, from facultative saprophytes to obligate parasites. This is a great step forward in the biology of tuberculosis.

[1] Berliner Klin. Woch., 1899, xxxvi, 562.
[2] Cbl. f. Bakt., Abth i, 1899, xxv, 532.

"THE LETTER KILLETH."

Medical reform is not achieved without occasional temporary setbacks in the way of judicial decisions in the lower and, more rarely, in the higher courts, but, like Galileo, we can say the world does move, nevertheless. Not so very long ago a local Illinois judge discharged, on a writ of habeas corpus, one Van Noppen, convicted of practicing medicine without a license and committed to jail in default of payment of his fine. In a second case, however, the same attorney similarly petitioned the supreme court and got a decision that bars future habeas corpus proceedings in like cases. A more recent lower court decision, as reported, is that the State Board of Health has no authority to inquire into the acts of practitioners who received certificates prior to July 1, last, when the present Illinois medical practice act went into effect. The Board proposed to revoke the certificate of a physician for unprofessional conduct, and on his petition for an injunction, the above opinion was rendered. It was held that the statute expressly repealed all the prior acts and limited the power of the Board to inquire into the acts of those whose license dated after its having gone into effect. It is evident enough that this was not the intention of those who framed the statute, nor was it the understanding of it by the legislature that passed it. This was maintained by the counsel for the Board of Health, in his argument, but the judge evidently took the purely technical view as against the general principle of interpretation of the law, according to the evident intent of the lawmakers as shown by the whole of the legislation on the subject. It was Lord Eldon, we believe, who once said in relation to the technical interpretation of statutes, that there was not a single act of Parliament through which he could not drive a coach and four. The natural inference is that he did not specially regard technical defects as such. The Illinois judge in this case evidently took no such view, though he riddled the intention. We had supposed that

the latter was always first considered in the interpretation of a statute, but it seems this is not invariably the case. Even in regard to the higher law of the Scriptures, it is said, "the letter killeth, but the spirit giveth life." It is understood that the case is not ended, but will be taken to the supreme court, where it is reasonably hoped that the decision of the lower court will be reversed, as in the former case to which we have referred. It would be unpleasant to contemplate the possible unbridled license afforded by the ante '99 registration if this should not be the case, but the public would be the chief sufferers. The Illinois medical practice act is likely to be attacked in the next legislature and criticisms of it and the State Board of Health are being freely disseminated in the daily press. It must be considered, however, that it affords a great advance over prior conditions, and that it is better to aim to correct its defects by future amendments than to criticize it for them. The disreputable among both regulars and irregulars and the diploma-mill gangs will do their best to give us something worse. They have been stirred up by the activity of the present secretary of the Board, who is evidently endeavoring to enforce the law according to its spirit and intent, in spite of criticism and adverse technical lower-court decisions.

APHASIA AND WILLS.

The question of the testamentary capacity of a person suffering from aphasia in one of its forms, is, it is said, to be brought up before a New York court. Such cases have occurred before, but they are sufficiently unusual to be noticed in the lay press and have some medical interest. So far, however, as legal precedents exist they are of no real value whatever; the question is exclusively a medical one and each case is a law unto itself. It is entirely possible for a sufferer from aphasia to be of sound and devising mind so far as the disposal of his property is concerned; medical evidence must decide how far mental impairment existed and whether it affected testamentary capacity or the power of expression sufficiently to invalidate a will. There is a certain presumption that mental capacity may be affected when so important a function as that of speech is abolished or seriously impaired, but this is not necessarily the case as regards devising capacity. The subject is one, however, that suggests a great variety of possibilities, and there is a chance of there being a leading case evolved from the proposed suit, provided it is decided according to the best lights of modern medical science.

SANITARY REGULATIONS OF THE BARBER SHOP.

In Missouri a law has been passed requiring barbers to keep the regulations prescribed by the State Board of Health conspicuously posted. These include directions as to the care of towels, razors, brushes, combs, etc., under ordinary circumstances, and especially after use on customers with eruptions of any kind. The barber is required to wash his hands in running water before handling each customer, to have a disinfecting oven at hand and use it, and to employ clean, unused towels for each customer. If this law is duly enforced, it will probably give some trouble at first to the barbers, who may raise their prices accordingly, but competition and the law of supply and demand will soon regulate that phase of the subject. To the public it will be a valuable safeguard, and there is no sufficient reason why it should not be a success, at least if the local health boards do their duty. The perils of the barber shop under its unregulated régime are very real, as Dr. A. Walter Suiter has shown, and it is only remarkable that so many apparently escape them. Other states have also passed similar laws, and it will be of interest to watch their effects. In any case it will be well if the public can be educated to patronize only those establishments where such regulations are thoroughly and consistently carried out.

DIAGNOSTIC UTILITY OF X-RAYS.

There can be no doubt of the great utility of the X-rays in the diagnosis of various morbid conditions, although this mode of investigation, like other physical methods of exploration, may in some instances be not infallible, and in others it may alone be insufficient to yield the desired information. The X-rays are capable of disclosing differences in density of structure, and where these are sufficient to be appreciable as shadows to the eye of the observer, there the rays will be of service. It must be borne in mind, however, that wide variations exist in visual acuity, and, in particular, in that special kind demanded in X-ray work, and, further, that this may be sharpened by constant exercise. The X-rays can not disclose the actual nature of the structures responsible for the variations in density that give rise to fluoroscope or skiagraphic shadows. This information must be supplied by collateral evidence, just as we have learned to appreciate that variations in percussion resonance, in breath sounds, in heart sounds, in vocal fremitus, etc., are not severally dependent on identical lesions, and a decision as to their nature must be reached from a consideration of all of the circumstances in the case. The method of investigation is one that requires painstaking and persistent application, but, above all, that not too common qualification designated common sense.

"CHRISTIAN SCIENCE" AND MICHIGAN LAW.

The following are the chief points of an opinion of Attorney-General Oren of Michigan, given in reply to a question as to the legal status of "Christian Science" healers and their duty as regards reporting of dangerous communicable diseases under the Michigan law. The act as amended requires reports to the health officer, and in its penal clause declares that every physician and person acting as a physician, who shall refuse or neglect to immediately give such notice shall forfeit for each such offense a sum not less than $10 nor more than $50. "It is plain," says the attorney-general, "from the wording of the above section of the act, that it applies to either physicians as such, or persons acting as physicians." The question whether a "Christian Science" healer is thus included is taken up, and he finds that the term "physician" is only applicable to one lawfully certified by the board of registration. A "Christian Scientist" is, therefore, not a physician unless he is thus registered. Coming next to the phrase, "acting as a physician," he

says: "The evident intention of the legislature in adding this class is to broaden the meaning of the section in order that it may include persons not physicians, and thus bring within its construction all the cases that might otherwise fail to be reported." If it was, as he thinks, intended to give the words, "acting as a physician," the wide meaning of which they are capable, they should be so construed. The evil the statute aims to meet is the danger to the public from the non-reporting of these diseases by failure of physicians and persons acting as such to duly report them. It follows, therefore, assuming this to be the intention of the lawmakers, that anyone who takes charge of and attempts to treat these dangerous communicable diseases, mentioned in the statute, by any means whatever, would be liable for not reporting them as required by the law. This would include a person employing "a system known as 'Christian Science.'"

TUBERCULOSIS OF THE DOG.

In these days when the struggle against "the white plague" is prosecuted with such vigor from all sides, it behooves us to take close notice of all possible sources of infection. Tuberculosis in the domestic animals has long been held as a source of danger, direct and indirect, to man. The occurrence of tuberculosis in the dog, an animal which often lives in very intimate relations with his master, is perhaps not as generally known as it ought to be. In fact, there are statements current in some of our text-books that the dog is immune to tuberculosis. This is far from being the case. There are numerous examples of extensive and fatal tuberculosis in this animal, which frequently becomes infected from contact with tuberculous patients. Instances have been described of canine tuberculosis the undoubted result of the licking up of sputum, etc. Barrier[1] recently furnished a new example of abdominal tuberculosis in a dog, contracted from his masters. The most interesting point in this case was the presence of intestinal ulcers, swarming with bacilli, which had rendered the animal a dangerous focus for infection, inasmuch as innumerable germs were undoubtedly discharged with the feces. Barrier therefore recommends that the same law be applied to dogs as is in force in France against bovine tuberculosis. Sheldon[2] has described an example of nodular tuberculous pericarditis in a dog of the large and powerful breed known as the "great Dane." There was tuberculosis of the peribronchial lymphatic glands and undoubtedly this is an illustration of infection in the dog by way of inhalation. Canine pets which show symptoms of chronic disease, such as emaciation and weakness, should therefore be regarded with suspicion, and dogs should not be allowed to associate with consumptives.

MEDICAL INSPECTION OF SCHOOLS.

The world is beginning to realize that prophylaxis has become a most important department in the practice of modern medicine, and that the duty of the progressive physician is not less to prevent than to cure disease. Much disease is spread by contagion, by the association of sick and well, often by intermediate communication, and wherever large numbers of individuals are associated, it should be considered necessary to subject them to regular and systematic examination. Children are extremely susceptible to some forms of transmissible disease, and schools have often been active media in their spread. The practical outcome of the recognition of this fact can be found in the designation in a number of large cities in America, as well as in Europe, of physicians for the purpose of making inspections of schools as to light, air, heat, drainage, and the like, and also with regard to the presence of disease, or even the suspicion thereof, among the pupils, and following these with the necessary corrective measures. This has been done with the utmost success in New York City, for example and a like movement has recently been inaugurated in Chicago[1]. Institution of a similar plan in Philadelphia is contemplated, as the method was employed and proved successful a number of years ago, but for some unaccountable reason was abandoned. It is now proposed to appoint 150 physicians at an annual honorarium of $300 each, to make every morning, under the joint auspices of the Board of Health and the Board of Education, an inspection of the children in all of the schools, and to send home with proper instructions, those who appear to be ill. This work is already being done in part by a small number of volunteers, and while the contemplated outlay of money appears considerable, it will soon be found that an actual saving will be made, as measured by the health of the community and the death-rate. The movement is one that is in every way commended, and it is entirely in a line with modern hygienic conceptions.

CONGENITAL VACCIN IMMUNITY.

A comparatively recent joint investigation by MM. Beclere, Chambon, Ménard and Coulomb, reported in the *Comptes Rendus* of the Paris Academy of Sciences,[1] and editorially noticed in an English publication[2], is of decided interest as bearing on the living questions of immunity and susceptibility. If we are not mistaken, we have rather recently noticed some clinical observations supporting the results here given. These investigators made observations on sixty-five mothers and an equal number of newly-born infants, and their findings are summed up in the following: immunity to vaccin inoculation was observed only in children whose mothers were immune, and only in a small number of these. The intrauterine transmission occurred in cases where the maternal serum was antivirulent, irrespective of the time when the mother was vaccinated. It was not observed, on the other hand, when the maternal serum was non-antivirulent, although vaccination had been effected shortly before or during pregnancy. The condition, therefore, of so-called congenital immunity is the transmission of antivirulent substance from the maternal to the fetal blood through the placenta. The condition, however, may be fulfilled without result, as some of the newly-born whose serum was antivirulent could be inoculated with success, and in fact the degree of antivirulent potency is variable, but it may be said that the more

[1] Societé Central de Médicine Vétérinaire, 1899, p. 255.
[2] Medicine, 1898.

[1] JOURNAL, November 11, pp. 1232, 1241.
[1] Vol. cxxix, 1899, pp. 235-237.
[2] Popular Science, November.

antivirulent the serum, the greater the presumption that vaccinal inoculations will fail. These experiments open up a comparatively new line of research, at least in the human species, which certainly appears promising, and it is probable that they will be followed by others that will confirm or modify the results. A further clinical study along the same line is suggested and is certainly desirable. The facts as reported, as the editor of *Popular Science* remarks, at least "make it difficult to deny the justice of the interpretation that in certain cases there is a passage of antivirulent substance from the blood of a vaccinally immune pregnant mother to the blood of the fetus and that the child may in consequence be born immune."

PERIARTERITIS NODOSA AND SUPRA-ARTERIAL EPICARDIAL FIBROID NODULES.

Periarteritis nodosa is marked by circumscribed inflammation of medium-sized arteries usually in the form of greyish-white nodules up to the size of a pea, occasionally as more diffuse thickenings. The foci are scattered along the course of the vessels and at the giving off of small branches. The cerebral arteries are rarely involved, the most favorite location being the pulmonary, mesenteric, coronary, renal, hepatic and muscular arteries. As many as sixty-three nodules have been seen in one case. In Kussmaul's original case there were subcutaneous nodules over the chest and abdomen. Among the various views as to the cause of these changes, Schrotter[1] advocates the one held by Eppinger, namely, that the nodules are multiple aneurysms due to a congenital defect or weakness in the elastic layer, followed by cell accumulations in the adventitia and the media. The disease seems to be a distinct entity; at times the first symptoms are fever and rapid pulse, edema in various parts, articular effusions, pain, especially in the muscles, at other times fever is absent. In nearly all the cases, a peculiar anemia and general weakness have been observed. The electric muscular reactions may be changed, there being less irritability, and more or less loss of motor power may occur. According to location, muscular, renal, hepatic and other types may be distinguished. The febrile symptoms are attributed, by Schrotter, to the formation of intestinal ucers, to bronchitis and other secondary changes; the arterial changes in most cases probably are present some time before symptoms become apparent. The disease is most frequent between the ages of 20 and 30; it attacks males oftener than females. There are a number of conditions which must be considered in the differential diagnosis, such as miliary tuberculosis, septicemia, trichinosis, polymyositis and polyneuritis. In some cases antisyphilitic treatment has been followed by improvement. Recently Knox[2] described the occurrence of distinctly fibroid nodules in the epicardium directly over the coronary arteries, rarely over the coronary veins. These nodules may resemble the lesions of periarteritis nodosa, which is described as involving the coronary arteries also, but Knox points out that there are essential differences. The supra-arterial nodules are situated outside the adventitia and within the epicardium, they are made up of a sclerotic fibrous tissue containing but few cells. The arterial wall beneath the nodules shows, quite regularly, thinning of the muscular coat and reduction of elastic elements—changes which are attributed to irregularities in blood-pressure and to defective nutrition. The tendency of the arterial wall to bulge at the spots of weakening is perhaps held in check by the supra-arterial fibrous nodules. Knox does not offer any theory as to the cause of this peculiar new growth of tissue.

[1] Wein. Klin. Woch., April 13, 1899.
[2] Jour. of Exp. Med., 1899, iv.

Medical News.

DR. E. C. GROSSKOPF has been elected superintendent of the Milwaukee County Hospital.

A BAZAAR given by the different churches of Bridgeton, Pa., has netted $1100 for the Bridgeton Hospital.

DR. R. JORGE, the Oporto physician and sanitarian, has been appointed chief of the National Board of Health of Portugal.

A NEGRO patient of the Hospital for the Insane at Kankakee, Ill., was murdered while in bed recently, probably by a patient.

LATE Vice-President Hobart's will leaves $5000 to the St. Joseph's Hospital and a like sum to the General Hospital, Paterson, N. J.

LAST September a colored man and his wife, Unionville, Pa., were bitten by a supposed mad dog. On the sixtieth day, both exhibited symptoms of the disease and were taken to the Pasteur Instiute for treatment. Death of the man occurred November 27. The wife's recovery is doubtful.

THE TWO men referred to in last week's JOURNAL (p. 1434) have been committed to prison for removing the labels from packages of oleomargarin. One was sentenced to pay a fine of $1500, with imprisonment for six months; and the other was fined $500 and given imprisonment for four months.

A VIOLENT explosion of gas completely demolished the interior of the department of the pay patients at the chief hospital at Brussels recently, inundating the patients with bricks and plaster, but without serious injury to any one; only one person, a nurse, was slightly wounded by a flying piece of brick.

THE U. S. transport *Burnside* has arrived at New York City, from Cuba, with a case of yellow fever aboard. The sick person is a discharged soldier, P. E. Reider, who was taken ill while en route. There were sixteen cabin and fifty-six other passengers. He was very seriously ill on reaching Swinburne Island.

THE LAW and Equity Court of Richmond, Va., in the case of Dr. Susan A. Roope vs. the J. L. Hill Pub. Co., for damages resulting from the publication of her name in the directory as a "midwife," a title which she claimed was not complimentary, has decided in favor of the defendant on the grounds that such publication was not libelous.

IN THE case of Mary West against a druggist of Pittsburg, Pa., in which it was claimed by the plaintiff that death followed the administration of headache powder given to her daughter, examination of the powder showed it to contain acetanilid. A physician testified that it was capable of reducing the action of the heart, and the judge ordered a compulsory non-suit, on the grounds that the plaintiff had not made out a case in law.

DR. A. H. DOTY, Health Officer of the Port of New

York, who has recently returned from abroad, reports that the danger of importation of disease by Russian emigrants is greatly exaggerated. He found the science and laboratory work of the Russians for the prevention of dreaded diseases of the highest standard. In his visit to St. Petersburg, Moscow, Warsaw and other cities he found excellent systems of isolation and disinfection in effect.

SMALLPOX has been prevalent in Dixon, Ill., for the past six weeks, but owing to the mildness of the disease it was not recognized by the local profession. There have been about 100 cases which were regarded as chicken-pox until the correct diagnosis was made by the inspector for the State Board of Health. The diagnosis of smallpox has been confirmed by Dr. J. A. Egan, secretary of the Board, and Dr. Heman Spalding, inspector of the Chicago Health Department.

PROF. J. G. ADAMI, of McGill University, Montreal, addressed the physicians of St. Paul and Minneapolis, Minn., December 2, on goiter, and December 4 on "Latent Infection and Subinfection in Regard to Pernicious Anemia." Prof. Adami delivered the annual address before the Chicago Society of Internal Medicine, as previously announced in the JOURNAL, on the evening of November 29. The morning of the same day he gave a clinical lecture in the Cook County Hospital, and on Thursday evening was tendered a dinner in the Auditorium Hotel. This address will appear in the JOURNAL.

SUBSCRIPTIONS have been opened in all the European centers for the wounded in the Transvaal, and the French Red Cross Society has presented the English society with all the surgical appliances necessary to equip two field-hospitals. They have been installed on the hospital ship *Princess of Wales*. The Netherlands-South African Association has already collected 220,891 florins in Holland for the wounded Boers, and 5,700 florins in Paris. Belgium is sending ambulances with ten surgeons and thirty nurses. The German Red Cross has dispatched one ambulance and is now preparing another. The four field-hospitals equipped by the French Red Cross are ready to start.

MEDICAL SERVICE FOR THE TRANSVAAL WAR.—Considering the undermanned condition as regards officers of the army medical service, the *British Medical Journal* of November 25 says that the service is still 60 below the total of 890 which a late director-general described as a "preciously low" establishment, and 83 per cent. of its effective strength is at present serving abroad. Only about 16 per cent. of its executive strength was available for contingencies November 1, and these latter, by reason of mobilization, must be reduced to practically 11 per cent. In other words, barely 100 medical officers are available for the mobilization of a second army corps, should that prove necessary, and then not a man would be left at home to fill vacancies. It looks as if every casualty in South Africa and Great Britain's foreign garrisons, among commissioned medical officers, must remain unfilled. In spite of this condition, the *Journal's* special correspondent writes from Cape Town, under date of November 1, of the excellence of the arrangements made by the Royal Army Medical Corps in South Africa. He considers the Natal force admirably provided for and says that, contrary to what has sometimes happened, nothing has so far been wanting. Owing to the heavy work for the bearers, especially at Elandslaagte, Indian bearers are preferred to the whites, as they have "the hands of a woman" and they exhibit an absolute indifference to the risks of being under fire.

Correspondence.

Is the Present Method of Disposing of the Human Dead the Best That Can Be Adopted?

WHITEHALL, ILL., Nov. 27, 1899.

To the Editor:—The numerous objections to the present methods of burial of the human body after death must have presented themselves to a great many thinking minds; but, such is the force of custom, we will go on from generation to generation perpetuating the same grievous errors, solely because it is custom. In the present iconoclastic age, every individual should rise above being governed by such trivial motives, and squarely question every important act concerning the affairs of life, striving to see if it be not possible to leave to posterity a better series of customs than our ancestors have left us. There should be no superstitious veneration that perpetuates an evil, simply because it is hoary with age. A human body clad in woollen garments, incased in a wooden casket, this in turn placed in a wooden box, is in a condition to remain a source of offense for a long period of time. If the body has been embalmed, as is most usually done at the present time, the undesirable conditions are enhanced many fold.

Cremation, which to a limited extent is gaining ground, can scarcely be universally practiced, on account of the expense. The original cost of the crematory, preventing its erection in sparsely settled districts, and the expenses connected with the reduction of a body to ashes, place it out of the reach from a financial point of view, of a very large number.

There should be but one method of disposing of the dead, applicable alike to rich and poor, a method that, while exhibiting nothing but tender love and care for the remains of those hallowed to us by so many loving ties of kinship, or friendship will at the same time dispose effectually of the possibility of desecration by future generations. Just what this method should be is probably open to discussion and experimentation, but as an entering wedge and a basis for a working formula, something like the following might be adopted. The body, prepared for burial without embalming, is dressed in thin linen or cotton goods; if the latter is used it should be rendered absorbent. Then, commencing at the feet, the body is wound in graceful folds, in a sheet made of absorbent gauze, as far as the chest, with sufficient left to continue over the face and head later on. It is then placed in the casket. The grave should have no lining, but the bottom should be previously thickly covered with quick-lime. At the grave the sides of the casket should be removed, the folds of the winding sheet continued up over the face and head, and the false bottom of the casket on which the body rests lifted with the body and lowered into the grave, where it is slipped from under the body, which then rests directly on the bed of quicklime. The body is then to be entirely covered with the latter, and the grave filled with earth. The winding sheet prevents direct contact of the lime with the skin, and should be as soothing to the feelings of friends as the more elaborate covings used at present. Together with the clothing, it is absorbent, and offers the least amount of resistance to the action of the lime, so but a short time would elapse before the body has been rendered innocuous, and safe from future desecration. The casket is to be returned with the hearse, and, on being fitted with new linings, would be as unobjectionable for future use as the hearse. By this method we would practically obtain cremation, at least as far as the soft tissues are concerned, free from the objectionable features of the present method, as all would be covered in the earth, with no smoke nor odors, and a final disposition of the ashes provided for at the same time. Such a burial would be comparatively inexpensive, a feature of the greatest importance.

H. W. CHAPMAN, M.D.

New York City.

A FEW days ago a young man died at St. Luke's Hospital from blood poisoning, said to have been produced by scratching a pimple on his face with his finger nail. He was only ill about a week.

SAILORS' SNUG HARBOR INVESTIGATION.

As a result of the investigation into affairs at the Sailors'

Snug Harbor (see JOURNAL, November 25, p. 1372), the trustees adopted, by a vote of five to one, a report fully vindicating the commander, Daniel Delehanty. They found that the charge had been trumped up by subordinates who had come into conflict with the commander in matters of discipline; moreover, they branded as maliciously false the charges made against him, and commended him for his discretion as well as his energy in conducting the affairs of the harbor.

NEW YORK LYING-IN HOSPITAL.

The report of the Hospital says that 3268 persons have received medical attendance, 412 of these in the hospital wards and 2848 at their homes, during the past year. Out of this number 2033 were of foreign birth. It is asserted that the average wages of the husbands of these women was $32.24 per month, so, after deducting the rent there was 81 cents a day for the support of the family. A gift of $250,000 is announced from J. Pierpont Morgan, in addition to his original donation of $1,000,000 for the erection of a new hospital building, and certain lots.

CHILDREN'S AID SOCIETY.

According to the annual report, the daily average attendance the year past, at the industrial and evening schools maintained by the Society, has been 7218; the average daily number of homeless boys and girls who found shelter in their lodging houses was 402 Through a system of visiting, 3662 destitute families were relieved. No less than 1571 children have been sent out of the city in the past eleven months, and 70,000 persons, mostly children, have been permanently removed from the overcrowded city, since 1854. During the year the Society received from the city $105,654, and from all other sources, $243,385.

SERUM TREATMENT FOR CANCER.

DR. P. J. MCCOURT, of this city, has been engaged for some years past in studying the effect of treating cancer by different varieties of serum. He claims to be working along new lines, and certainly it would appear so to most persons listening to his description of the method. He says he obtains the primary serum from typical cases of rapidly recurrent carcinoma, the virus being collected from the ulcerated surface under proper precautions. It is then mixed with a perfectly pure vegetable glycerin, and subjected to a series of triturations and repeated subdivisions, whereby, he asserts, the toxins become converted into antitoxins. He does not employ the subcutaneous method, but advises that the serum be given by the mouth, two or three times a day, and continued for a long time. Dr. McCourt exhibited his serum at the close of one of the Section meetings of the New York Academy of Medicine the other evening. He stated that while considerable clinical material had been kindly placed at his disposal by a number of the hospitals treating cancer cases, the present communication was strictly a preliminary one, and he would not speak of the results obtained with the serum further than to state that it had been found to relieve pain, improve the general health and retard the progress of the cancerous growth.

Philadelphia.

THANKSGIVING donations at the German Hospital amounted to $9000 in money and serviceable articles to the value of $1200.

DR. JOHN B. DEAVER, visiting surgeon of the German Hospital, has offered a prize of $100 to the student who at the end of the year shall present the best set of notes taken from his clinics held at the hospital each Saturday afternoon.

DRS. F. A. PACKARD and J. Allison Scott have been added to the medical staff of the Pennsylvania Hospital. Dr. J. Harvey Shoemaker was appointed physician to the out-patient department, and Dr. Francis A. Craig was elected resident physician.

DR. ALBERT FRICKE, who died last week (see JOURNAL, December 2, p. 1440), devised one-half of his residuary estate of $32,500 to the Mutual Aid Association of the Philadelphia County Medical Society, for the use of the Association.

THE CORONER has been notified of the death of a girl, 12 years of age, attributed to eating pills which have been scattered broadcast by many of the houses dealing in patent medicines. She ate a large number, probably thinking the pellets were candy.

SOME DISCONTENT is manifested by parties interested in the establishment of a hospital for orthodox Jews in this city. Rival factions seem opposed to the plan and want an institution established which will receive all foreigners alike, without reference to such a strict ruling as that demanded by the former institution.

A MAN, while having the hot air method applied for rheumatism of the arm and shoulder in one of the institutions of the city during the past week, became severely burned from the ignition of the material with which the parts were wrapped.

THROUGH the good will of a party whose name is for the present withheld, $250,000 has been given the University of Pennsylvania for the establishment of a laboratory of physics. The total valuation of new buildings now in the course of erection and those recently built amounts to $2,100,000.

THE AUTHORITIES of the St. Mary's Hospital have acquired the property located at 1737 and 1739 Frankford Avenue, costing $13,500, on which it is proposed to erect a new hospital. The buildings now on the grounds will be torn down to make way for the new one, which will have an additional 200 beds and several new wards.

MORTALITY STATISTICS.

The number of deaths during the past week was 410, an increase of 24 over the previous week, and an increase of 11 over the corresponding period of last year. The principal causes of death were: apoplexy, 12; nephritis, 29; cancer, 16; tuberculosis, 52; diabetes, 2; heart disease, 35; pneumonia, 48; diphtheria, 142 cases, 31 deaths; scarlet fever, 54, and 1 death; typhoid fever, 35, and 6 deaths. There were also 2 deaths from cerebrospinal meningitis.

PHILADELPHIA MEDICAL CLUB.

The members of this Club have decided to make application for a charter and have their own club-house. They now number about 500. In the application for the charter the objects of the Club will be stated to be to encourage among its members social intercourse and a free discussion of matters affecting physicians, elevating the standard of medical ethics, aiding in all movements tending to increased professional skill and efficiency in the treatment of disease, and the maintenance of a club-house and library for the use of the members. The officers recently elected were: president, James M. Anders; vice-presidents, Charles W. Burr and G. E. de Schweinitz; secretary, Guy Hinsdale; treasurer, John H. Locke.

Louisville.

HEALTH DEPARTMENT.

The annual report of the health officer for the fiscal year ending Aug. 31, 1899, has just been issued. The estimated population is 226,678; whites, 186,567; colored, 40,111. The death-rate of the whites is 13.93; colored, 23.16; white and colored, 15.32. Dr. Allen asks for a $15,000 appropriation for the maintainance of the Department. With this one inspector would be allowed for each ward in the city, and he be held responsible for the sanitary condition. It would admit of the employment of a chemist and bacteriologist, also a milk and an assistant live stock inspector, and a secretary for the Department alone. The work of the Department in dealing with an epidemic of smallpox is reviewed, about 25,000 free vaccinations being performed. Of the 534 cases reported, 525 were removed to the Eruptive Hospital. Those not removed were too enfeebled to permit of it. There was a mortality of only six in all cases. To prevent the spread, all woollen and cotton fabrics in the room from which a patient was taken were burned, the house fumigated by formaldehyde and all persons in the immediate vicinity vaccinated. The city paid for articles destroyed. Of all primary vaccinations, 90 per cent. proved successful, the results with glycerinated lymph showing less inflammatory condition following.

The appointment of medical inspectors for schools is recommended, also later admission of school children—not until after the age of 7 years. The statutes of the state, however control this. It is suggested that provision be made for the free use of diphtheria antitoxin for the poor, and strong recommendations are made for a better and more thorough milk supervision. The possibility of contamination of the city water-

supply from the sewerage from Lakeland Asylum is suggested. An abattoir is recommended; plumbing inspector; barbershop sanitation; a sanitary record of houses, describing cesspools, wells, condition of plumbing, record of deaths and contagious diseases; public baths; public urinals; water plugs for the flushing of streets and alleys; drinking fountains; the abandonment of public wells; sprinkling streets with crude oil instead of water; regulation of tenement houses; restrictions of second-hand clothing dealers; vegetable growths on streets and side-walks; further restrictions in regard to practice of midwives; receptacles for waste paper and materials on the streets; prevention of avoidable noises; payment for transcribing of health records and certificates; incineration of garbage. The report gives the following statistics: diphtheria placarded, 171; scarlet fever placarded, 323; houses fumigated, 537; dead animals removed by contractor, 5272; milk permits issued, 238; physicians right-of-way badges issued, 310.

Chicago.

A MEETING of the Medical Woman's Club was held Tuesday, December 5.

MORE THAN 300 physicians have applied to the Civil Service Commission for examination for medical inspectors of schools.

THE MANAGERS of the Alexian Brothers' Hospital have decided to establish a training school for lay nurses. The course of instruction will be similar to that which has been given for a number of years to the members of the order.

MORTALITY STATISTICS.

During the past week there has been a steady decline of mortality from all acute diseases and especially the communicable. Only deaths from chronic diseases show an increase, and the excess—45—over the week previous is due to these and to deaths from violence. According to the weekly bulletin, the temperature of November was a record breaker. The mean was 45 degrees, the highest in thirty years and seven degrees higher than the November average. Only 1.14 inches of rain fell, instead of the average 2.73. To the former is attributed, by the Bulletin of the Health Department, the decrease in the fatality of the contagious diseases; to the latter is due the generally improved character of the water-supply, with a consequent reduction of the acute intestinal diseases and typhoid fever.

St. Louis.

DR. SIMON POLLAK, the oldest and one of the most honored physicians in this city has been seriously ill, but is now convalescing.

DR. E. W. LEE, Omaha, Neb., who was medical director of the Trans-Mississippi Exposition was recently invited by the management of the St. Louis World's Fair (1903) to present his views on expositions, while passing through St. Louis en route to Europe.

MUCH HAS been said in the papers about typhoid fever in this city, but there has been only a little more than the usual number of cases of autumnal fever, and but a small percentage true typhoid, the majority being pernicious types of malarial fever.

HOSPITAL MANAGEMENT.

The medical profession here is becoming aroused to the importance of such modification of hospital management as to secure the services of the best medical talent. Under the existing conditions all the sick in each of the city institutions are cared for chiefly by the internes, who have at best only limited experience, the medical superintendents being largely absorbed with executive duties. It is to be hoped that eventually a permanent medical service will be established in all the large cities—that the subordinates who are appointed after competent examination will be properly paid for the performance of duty, that after a definite term on examination they will be advanced, being first, assistant, then passed assistant, then surgeon. With a sufficient number of physicians on duty in each hospital, better service will be rendered, and the cause of science will be advanced. The St. Louis Medical Society recently appointed a committee to investigate the hospital management in the various cities of the United States, of which Dr. Joseph Grindon is chairman.

Baltimore.

DR. J. S. WOODWARD of Sparrow's Point, a suburb of Baltimore, has been fined $50 and costs, amounting to $76.21, for failure to report a case of smallpox last summer, to the State Board of Health.

W. A. FISHER of the Johns Hopkins Medical School is investigating actinomycosis, working on a case which was successfully operated on two weeks ago by Dr. J. T. M. Finney. He is cultivating, in the Hopkins Laboratory, a bacillus removed from the tissues, and inoculating rats and mice with it.

DR. HOWARD A. KELLY of the Johns Hopkins University, is much interested in snakes and keeps a considerable collection of poisonous and non-poisonous varieties. Dr. Kelly and Dr. Thos. R. Brown are investigating the subject of snake poisons and their antidotes, and the former proposes writing a book on the snakes of North America.

The Chemical Laboratory of the Johns Hopkins University was damaged by fire, December 4. All the apparatus and chemicals on one floor were destroyed, while the contents of the other floors were injured by water. The walls are still in good condition. The fire is supposed to have originated from an electric wire or spontaneous combustion.

Cincinnati.

DR. D. E. WEATHERHEAD has been named by the county commissioners as jail physician to succeed the late Dr. L. D. Bramble.

AT THE last monthly meeting of the Cincinnati Society of Natural History, December 5, Dr. C. R. Holmes delivered an illustrated lecture on "The Eye, Its Evolution and Functions."

Canada.

(From Our Regular Correspondent.)

VACCINATION IN NOVA SCOTIA.

TORONTO, Dec. 2, 1899.

At the last meeting of the Medical Society of Nova Scotia, the statement was made that fully two-thirds of the population of that province, under the age of 16, had never been vaccinated, and the statement is vouched for. At any time an outbreak of smallpox might appear there, especially since, in two sections of neighboring provinces, the disease has extended to a considerable extent. In 1886, Montreal suffered from a similar laxity of compulsory vaccination, and hundreds died. Smallpox may not now be so prevalent throughout the world, but it is not by any means extinct; therefore it ought to be kept in check by universal vaccination. Nova Scotia would do well to make this procedure compulsory, but before taking any decisive step in that direction, there ought to be established a proper method of the registration of births. It is a serious and distinct loss to the province, that there is no method for the registration of births, and to properly carry out vaccination such a method is certainly required. A committee was appointed at the aforesaid meeting to bring these two questions to the attention of the local legislature at its next session, and it is stated that that committee has the subject well in hand and will no doubt reap due reward for its labors.

REPORT ON TUBERCULOSIS.

Dr. Farrell of Halifax, who attended the congress on tuberculosis, at Berlin, in the interests of Nova Scotia, has made his report to the Minister of Agriculture of that province. It has been printed in pamphlet form and will be distributed throughout the province for public information. Four of the eleven pages of the report are devoted to a brief synopsis of the work done at the congress, the balance to what Dr. Farrell deems its best results. His opinions are summarized as follows: It is only in the early stages that treatment of any account promises good results; when the disease has fully established itself and the lung tissue is breaking down, the case is hopeless. It is easy to sum up the treatment under four heads: 1. Sunlight, open air, rest, dry soil for the home. 2. A good digestion and contentment. 3. Abundance of strong food, which should be taken to the limit of the digestive powers. 4. Medication of a constructive character, such as iron, cod-liver-oil and the like, with a moderate quantity of wine, beef and other stimulants. The report closes with a

suggestion to the Council of Education of the province, that every teacher in the schools of Nova Scotia should be familiar with the substance of the report, which should be communicated to the older pupils and the importance of hygienic principles dwelt on.

Deaths and Obituaries.

JOHN STANFORD SAYRE, M.D., passed assistant surgeon, U.S.N., died at his home in Monticello, Mo., November 29. He was born Aug. 7, 1857, graduated from Princeton College in 1878, and from the University of Michigan's medical department in 1881. Entering the navy in 1884, he was assigned to the Asiatic squadron, with which he remained until 1896. While on duty in the "Far East" he became widely known for his skill in a cholera epidemic. In 1897, much broken in health, he was retired on a pension, and as a volunteer at the outbreak of the Spanish-American War was assigned to shore duty, and after a year's service was honorably discharged with special mention.

GEORGE DYER MUDD, M.D., died in Baltimore, December 1, aged 73. He was born Nov. 20, 1826. He was graduated in medicine at the University of Maryland in 1848. He had held office at various times as member of both branches of the State Legislature, as postmaster at Bryantown, as deputy surveyor of customs and coroner of Baltimore.

A. BENZING, M.D., who died recently in Muscatine, Iowa, was born in Wurtemburg, and graduated from the University of Tübingen. He came to America at the age of 30, and located in Muscatine in 1871.

GEORGE CARY, M.D., Moulton, Me., who was born in that town in 1837, died November 29. He was graduated from the College of Physicians and Surgeons, New York City, in 1866.

W. D. CONE, M.D., Conesville, Iowa, died December 1, at the age of 62 years. He was graduated from the Keokuk (Iowa) Medical College, class of 1867, and from Bellevue the following year.

J. H. HASSENPLUG, M.D., a graduate of Jefferson Medical College, 1850, and during the Civil War surgeon of the 109th Penn. Vol., died in Philadelphia, November 25.

M. M. LATTA, M.D., Goshen, Ind., died suddenly, November 30, aged 77 years. He had practiced medicine in northern Indiana continuously for more than fifty-seven years, and helped to organize the first Elkhart County medical society, in 1845.

WM. H. NORFOLK, M.D., University of Maryland, 1856, died in Baltimore, of heart disease, Nov. 28. Some years ago he had retired from practice. He was in his 65th year.

GRANVILLE B. SLOUGH, M.D., Easton, Pa., died November 27, at the age of 61. He was graduated from Jefferson Medical College, in 1861, and during the Civil War was surgeon in the United States Navy.

Samuel Ellis, M.D., Chandler, Okla. Ter., died November 29....Edward P. Fishback, M.D., Magnolia, Ohio, recently, aged 45....John Izard, M.D., Roanoke, Va., November 22, at the age of 45....J. H. Kersey, M.D., Stuart, Iowa, November 28....O. D. LaGrange, M.D., Iowa Falls, Iowa, November 24; he was a graduate of Rush Medical College, Chicago....Edgar Miles, M.D., Sag Harbor (L. I.), N. Y., November 30, aged 75....F. W. Williams, M.D., New York City, died in Colorado Springs, Colo., November 22, aged 40 years....Chas. H. Winans, M.D., Belleville, N. Y., died at Liberty, N. Y., November 22.

Miscellany.

Where Love Is Indeed Blind.—A wedding ceremony in which all participants were sightless, occurred in Cleveland, Ohio, recently, and "love was blind literally, "says the *Oph. Record*, November. The bride and groom were sightless, as was the justice of the peace who officiated, and the members of the orchestra which performed the Lohengrin wedding march, while none of the invited guests could see. To every blind person in Cleveland an invitation to be present had been extended. Not even the beggar of the street corner was excluded, and for one night he mingled with good society and was made happy. The groom was a peddler of notions as was also the bride. A patron of the former, when she heard he desired to marry, offered to give him the wedding, and threw open the doors of her home to all the blind of the city, and with her friends, furnished a home for the young people.

Hydrophobia at Athens.—The Athens Pasteur Institute reports 797 persons treated since its foundation in 1894. Two died during treatment; the disease appeared in five others less than fifteen days after the last inoculation, but forty died during that time, outside, who did not apply for treatment. The incubation varied among the latter, from twenty days to a year; in 57.6 per cent., from 50 to 120 days.

Death-Rates in Cities and States.—According to recent records of the marine-hospital service the most unhealthful town in the United States was Liverpool, N. Y., with a death-rate per 1000 of 44.17—population 1200. Millerstown, Pa., with a population of 1162, reported only one death from any cause in 1898. Homestead, Pa., a city of 10,000, bears away the palm of healthfulness with 27 deaths in the twelvemonth. Cleveland, Ohio, has a death-rate of 13.63; New York City, 19.28; Boston, 20.09; Baltimore, 19.10; Washington, 20.74; Chicago, 14.08; St. Louis, 14.28; San Francisco, 19.41. The twin cities, Minneapolis and St. Paul, had a death-rate of only 9.16, against these New Orleans, 26.91. The most healthful conditions exist in the northwest and the region between the Mississippi River and the Rocky Mountains. Of the states in the less populous regions the following rates are held to be credible: South Dakota, 7.36; Minnesota, 9.08; Wyoming, 8.33; Iowa, 8.83; Colorado, 10.86; California, 16.26.

Serotherapy and Organotherapy Among Ancient Greeks.—Professor Lambadarios of Athens (*Grece Med.*, October) has written an interesting work in which he establishes that our most modern methods of therapeutics were foreshadowed by the ancients. King Mithridates he calls the father of artificial immunization and of serotherapy, as he experimented by taking a small amount of poison each day and thus rendering himself refractory to attempts to poison him. He also concocted an antidote which he took before or with the poison, believing that its action would be annulled by the antidote. It was made of every poison known at that date, including opium, combined with aromatic substances. He became so expert by his experiments on himself and condemned criminals, that physicians applied to him as to a modern Pasteur institute. He also invented serotherapy, in his method of protecting against the bite of venomous serpents, by adding to his antidote the blood of animals fed on vipers. He selected for this purpose geese from the Black Sea, considering them especially refractory to the venom of vipers, as they are accustomed to feed on them. Pliny and others mention the fact that these geese eat vipers. Dioscorides treated hydrophobia by having the subject drink the blood and eat the cooked liver of the dog that had bitten him, and mentions a number of cures thus effected, among them two physicians.

Piorkowski's Method of Early Differentiation of Typhoid Fever.—According to *Deutsche Med. Woch.*, November 26, Piorkowski has now forty cases to report in which he was able to make the diagnosis of typhoid fever from the third day of the disease to three days after the subsidence of the fever—many times when the Widal test was negative—by means of cultures from loops of the suspected feces, which developed so that the diagnosis was positive in from fifteen to twenty-four hours. The method was described in the JOURNAL when first announced (xxxii, p. 616, March 18, 1899), and is the same now, with some slight modifications: normal urine is kept for a few days at the temperature of the room, until it becomes slightly alkaline, and is then mixed with .5 per cent. peptone and 3.3 per cent. gelatin, and boiled forty-five minutes in the water-bath. It is then filtered and transferred to test-tubes, and sterilized the same day for fifteen minutes and the following day for ten. Three plates are then inoculated with 1, 3, and 5, and 2, 4, and 6 loops respectively, with the medium thus prepared, and solidified on ice when they are transferred to the thermostat, kept at 21.5 to 22 C., and in fifteen to twenty-

four hours the colonies of the typhus bacteria appear as generally oblong, small, clear, flagella-like colonies, gradually becoming more yellowish, rounder, finely granulated and surrounded by a delicate, characteristic tangle of tendrils sent out in spiral form into the gelatin. The colonies of the coli bacilli are sharp-edged, coarsely granulated, darker in color and always larger. Schütze confirms Piorkowski's statements with his experience in six cases, and considers the method as "of remarkable, even decisive, importance in establishing a positive diagnosis in the early stage of typhoid fever." Unger also reports twelve cases thus diagnosed. The method failed in two other cases, probably because the urine was too intensely alkaline. Piorkowski warns that if the general temperature is over 21 C. (70 F.), the gelatin will not solidify unless the proportion is increased to 6 per cent. H. Wittich confirms Piorkowski's statements after careful research, but supplements them by announcing the important fact (*Cbl. f. Bakt.*, October 28) that the bacillus coli on this medium occasionally develops exactly like the typhoid bacillus, deceptively simulating the characteristic typhoid colonies described, and only to be distinguished by a faint indol reaction, pink color, curdling of milk and production of gas with .25 to .5 per cent. grape-sugar bouillon. Consequently the differentiation is not complete until the colonies have been submitted to these familiar negative tests for the typhoid bacillus.

Feeding Children of Weak Digestion.—The November number of *Archives of Pediatrics* says: "The general practitioner is still altogether too prone to give ready-made foods, and to fall back upon that stronghold of ignorance, that 'there are many children who can not take milk.'" The writer refers to the error of prescribing too strong mixtures for children whose digestive power is below the average, and says: "The key to success lies in putting the strength of the mixture down to so weak a point that the child can digest it, and to then gradually work up to the point of tolerance. It is best in many of these cases to put the strength down at once to 1.5 per cent. of fat, and .75 per cent. of proteids, or even lower. The sugar strength is of less importance. The strength of the mixture should then be changed every two or three days until is has reached a satisfactory point." Many specialists in feeding these children of weak digestion "put the mixture down to very small percentages, notwithstanding the fears of the mother that the child will not get sufficient food. This is, moreover, the secret of the easy digestion of condensed milk. In a one-in-twelve dilution of condensed milk, the strength most commonly used, we have a food that contains but one-eighth the amount of fat and one-third the amount of proteid found in normal breast milk. The fact that children do no worse on these excessively weak condensed milk mixtures is but one of many proofs that they commonly receive more food than they require. If the doctor who is wedded to the use of condensed mlk would not make his fresh milk mixtures four or five times as strong as his condensed milk mixtures, he would be much better satisfied with fresh milk."

Distribution of Anthrax in Ontario.—Dr. W. T. Connell, professor of pathology, Queen's University, Kingston, Ont., has been giving some attention to the consideration of this subject during the past summer; and in a paper read at the annual meeting of the Association of Executive Health Officers of Ontario, gave the results of his work. As has been generally believed, anthrax is not so uncommon in this province, although it has only been proven to exist in certain districts. He is of the opinion that some of the fatal illnesses found in cattle, and looked on as inflammation, dropsy, etc.—terms which mean nothing to the scientific investigator—are anthrax. In the province of Ontario, we have at the present time four recognized centers where the disease has been proven to exist: Guelph, Acton, Listowel and Kingston. It was first recognized as occurring in the flat lands along the Speed River below Guelph, between forty and fifty animals dying there during the summers of 1886 and 1887. At that time it was thought that the infection was derived from some foreign wool used in the woolen mills at Guelph, the washings making their way into the infected flats along the river mentioned. The next outbreak noted was at Acton, where, in 1891 and 1892, evidence was produced before a committee of the Provincial Board of Health showing that here, for thirty-five years, the waters from the tanneries had drained into low lands lying on either bank of a small stream which ran through the village. In one of these tanneries hides were used which had been imported from the Argentine Republic, where anthrax is known to be particularly common. This past summer there have been two outbreaks of the disease in two different localities situated some three hundred miles apart, viz., at Listowel and on two farms in the immediate vicinity of Kingston, but some distance apart. At the former town there was evidence of the existenee of the disease for some years back, but only this summer was it positively recognized, when a bacteriologic examination was made. The veterinarians in that district differed in their opinions, one tracing the trouble to polluted water, and the other calling it anthrax. In Kingston it was variously termed as weed poisoning, arsenic poisoning, acute peritonitis and pleuritis, inflammation, dropsy, etc. At Listowel the cases occurred on lands traversed by a small creek into which the washings from both a tannery and a woolen mill emptied. Nothing was said as to the source of the wool or hides used. On one of the farms near Kingston, the disease has occurred annually for eleven years; on the other the cases which occurred this summer are the first noted. On the first farm the disease was first noticed in animals pastured on a point of land across the road from the main farm, this point being now Lake Ontario Park. This summer, however, it occurred in the animals pastured there as well as on the main farm. Twenty-five years ago a tannery was operated there, and as they used imported hides, it is inferred that the seeding of this point of land occurred at that time. On the second farm, the investigator was at sea in ascribing a cause for the seeding of this farm. It is one-half mile from the first farm, and no communication could be established between the farms whereby the second could become seeded. On the first, during the past eleven years, 42 head of cattle have died, 5 of them dying this year, as also one horse, and only one cow attacked this yeai recovered. On the second farm, four cows and one horse have died. Dr. Connell states that he had the opportunity of examining one of the cows post-mortem, and both horses. All presented the typical post-mortem appearance of septicemia by intestinal infection with anthrax, as hemorrhages in skin and internal organs—all serous cavities containing bloody serum, one horse having ten gallons of this in the abdominal cavity. A number of cases have occurred in men handling the dead animals, and in the tanneries, but so far as known no fatal ones. As probable sources of the infection we have, in the case of Guelph, woolen mills alone; in the Acton and Kingston outbreaks the tanneries are the only factors; while both are combined in the Listowel outbreak. Dr. Connell thinks that measures should be taken to prevent further seeding from these outside sources; and to root out the disease in the now infected areas.

Progress of the Plague.—In view of the progress of the bubonic plague, the U. S. Marine-Hospital Service has taken measures to prevent its introduction into this country. Fifteen officers of this bureau have been detailed for service in foreign seaports, and three are already on duty at Cadiz and Barcelona, Spain, and Naples, Italy. The other officers are to be stationed at London, Liverpool, Southampton, Queenstown, Glasgow, Havre, Hamburg, Genoa, Antwerp, Rotterdam, Bremen and Marseilles. These officers will inspect all vessels bound for the United States and keep the bureau advised as to the sanitary condition of the various cities. The Marine-Hospital Service reports 1 case of plague at Alexandria, Egypt, November 16, 7 cases and 4 deaths at Kurrachee, India, October 21-24, and 1 suspect case at Cadiz, Spain, November 27. The press dispatches from Yokohama, dated November 16, state that the disease has made its appearance in Kobe, Japan; 5 cases are reported, of which 3 were fatal. The pest is traced to cotton imported from China. Only two cases have been recently reported from Brazil and the sanitary conditions are somewhat uncertain. Advices state that Dr. Havelburg at Rio Janeiro believes the plague was probably introduced into Santos by means of the ship *Rei de Portugal*, which sailed from Oporto, Portugal, July 31. The mode of conveyance of the disease to the shore was by rats, among which a great mortality existed two or three weeks after the arrival of this

vessel. During the week ending November 9, 87 new cases and 72 deaths were reported at Mauritius. Three cases occurred on the Austrian Lloyd steamer from Brazil to Europe. Chantemesse was sent to study some suspicious cases, but cultures proved negative. As a precautionary measure he had sections of the sewers stopped up and substances burnt in them to destroy the rats. The sewers were then flooded and the carcasses washed into trenches. Dr. G. Daremberg, in a communication to the Paris *Journal des Debats*, states that the Anglo-Boer war will probably spread the plague throughout the world. Soldiers are being sent to South Africa from infected regions in India and elsewhere, and a campaign offers the most favorable conditions for the spread of an infectious disease. The *Journal de Med. de Paris* observes: "What would become of the Exposition of 1900 if a single verified case of the plague were to occur in France?" Too much reliance, it continues, must not be placed on the serum treatment, which has not yet been thoroughly tested, nor on childish attempts to kill off the rats. Chantemesse was sent to study the suspicious cases in Algiers and found them probably true plague but mild and confined to the locality, no new cases for three weeks. [The *Lancet* of November 23 states that the cultures resulted negatively.—ED.] But the plague is in Egypt, Austria and Turkey. A number of deaths occur daily in Portugal. It is slowly but surely gaining all the Mediterranean ports. Besides destroying the rats, the sanitary conditions of exposed towns must be made as perfect as possible with the most searching scrutiny of arrivals at French ports. At the meeting of the Board of Health, New York City, December 1, a resolution was adopted to the effect that under no circumstances would the docking of the *J. W. Taylor*, which ship arrived in New York with plague on board, as previously noted in the JOURNAL, be permitted, and that should the cargo be landed within the limits of the city it would be taken possession of by the Department, for examination and, if deemed necessary, condemned. It was also decided that the coffee brought on board the vessel would not be permitted to land at any pier in the city until the Board of Health had passed on the condition of the lighters to which it was transferred. The steamer *Roman Prince*, which arrived from Santos, Brazil, November 27, was quarantined, although no illness occurred on board during her voyage.

Crede Expulsion of Placenta and Ovarian Disease.—In *Obstetrics* for November, an editorial writer adds a new evil to those usually attributed to results of child-bearing, and largely unnecessary. He says that it is the rule for physicians to compress the fundus uteri in the third stage of labor, either to assist or hasten the expulsion of the placenta. "The amount of compression applied is frequently very great, generally gauged by the results obtained in causing the placenta to loosen. If the compression is applied to the fundus 'fore and aft,' the most injury it may cause will be temporary paresis of the uterine muscle and a mashing of the placenta without separation. The latter in turn may cause portions of the placenta to remain behind when most of it has been expelled. But if instead the man of power, in his hands but not his brains, should grasp the uterus *laterally*, his fingers and thumb may readily embrace the ovaries to their temporary pain and lasting injury. The force often applied in compression is sufficient to actually crush these egg-filled bodies." The tubes may also be ruptured.

Tetany from Exposure to the Sun.—In the *British Med. Jour.*, November 25 (p. 1474), Fox reports a case of this affection in a male of 13 years. He had been sitting in the sun all the preceding afternoon, and on reaching home complained of headache and vomited, was sent to bed, and woke up about 5 a.m., complaining of pains in his arms and legs, and that he could not move. The hands and feet were rigidly contracted in the position met with in tetany, and he was quite unable to move them. His knee-jerks were markedly exaggerated. He was very nervous and frightened, but apart from the condition of his hands and feet appeared in good health. There was not, nor has there been, any gastric or intestinal trouble. He was treated with a calomel purgative and 10-gr. doses of ammonium bromid every four hours. The spasms gradually relaxed, but it was five days before he could walk or use his hands properly. The case is of interest on account of the age of the patient and the total absence of any cause for the attack other than exposure to the sun, a somewhat unusual, or at least undescribed, cause of tetany.

Suggested Legislation for the Army Medical Department.—The following is the text of the bills, referred to in our editorial columns, which embody the views of the surgeon-general of the army, concerning the needs of his corps:

Bill for the increase of the Medical Department of the Army: Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Sec. 1. That there shall be added to the number of medical officers of the army now authorized by law, 4 assistant surgeons-general with the rank of colonel, 10 deputy surgeons-general with the rank of lieutenant colonel, 30 surgeons with the rank of major, and 80 assistant surgeons with the rank of first lieutenant who shall have the rank of captain at the expiration of five years' service as now provided by law. Provided that the original vacancies created by this act in the grade of colonel, lientenant colonel and major shall be filled by seniority promotion in accordance with established laws and regulations.

Sec. 2. Hereafter candidates for appointment in the medical corps of the army who pass a medical examining board in compliance with existing regulations shall be appointed acting assistant surgeons for a probationary period of six months; during this probationary period they shall attend the Army Medical School established at the Army Medical Museum in the City of Washington, and the faculty of the Army Medical School shall report to the Secretary of War at the end of the prescribed course of instruction upon the fitness and relative standing of the probationary candidates; those who are recommended by the faculty may then be commissioned by the President to fill existing vacancies in the medical corps of the army.

Sec. 3. Acting assistant surgeons appointed in accordance with the provisions of Section 2 shall be paid $100 per month and shall not be entitled to any allowances or to mileage in reporting for the prescribed course of instruction, or in returning to their homes if they are not recommended for a commission.

Sec. 4. The number of acting assistant surgeons appointed in accordance with the provisions of Section 2 shall not exceed the number of vacancies existing or to result from retirements during the probationary period.

Sec. 5. Candidates who have rendered satisfactory service as acting assistant surgeons or as commissioned medical officers in the volunteer army of the United States for a period of six months or more, shall be exempted from this period of probation and may be commissioned at once if vacancies exist and they pass a satisfactory examination as to their physical, moral and professional qualifications.

Bill for the Relief of Assistant Surgeons with the Rank of Captain in the Volunteer Army of the United States: Be it enacted by the Senate and House of Representatives of the United States of America in Congress Assembled,

That assistant surgeons in the Volunteer Army of the United States, commissioned by the President as captains, in accordance with the provisions of an act for increasing the efficiency of the Army of the United States and for other purposes (approved March 2, 1899), are entitled to the pay of a "Captain mounted," from the date of their acceptance of such commission as prescribed by law.

Bill for the Relief of Acting Assistant Surgeons in the U. S. Army: Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Sec. 1. That on and after the passage of this act acting assistant surgeons in the Army of the United States shall have the same rights and privileges as regards leaves of absence as commissioned officers of the army.

Sec. 2. Acting assistant surgeons in the Army of the United States, who have been appointed since the first day of May, 1898, who have been absent from duty, by proper authority, on account of sickness contracted in the service, shall be paid for the time of such absence at the rate per month specified in their contracts.

The Public Service.

ON THE ARMY RATION.

Articles have appeared recently in the public press criticising the army ration, denouncing its unsuitability for troops in a tropical climate and urging a radical change in its character. These articles are based on the elementary propositions that while fatty foods are good where a high development of animal heat is required, they are harmful in a climate where there is no call on the system for a large heat production. Every reader is willing to grant these propositions. They are simple and can be verified every summer and winter by the inhabitants of the north temperate zone. There are 12 ounces of bacon in the army ration, and this is no doubt an excess of fat for a dietary in the tropics. But it does not follow that the army ration should therefore be changed. The critics who see so clearly that the ration should be altered to suit their views of what is right and proper to be eaten in tropical climates and who are astounded at the dulness of those army officials who think it wise to be slow in doing anything of this kind do not appear to know that the ration is run on a broader gauge than the elementary propositions which form the basis of their argument.

There is in the the Army of the United States a considerable difference between the ration of the soldier and the diet of the soldier. The critics of the army ration do not understand this. The ration is the allowance for subsistence of one person for a day. The diet is what is actually prepared in the kitchen for consumption by the soldier day by day. The ration is prescribed by law and consists of the meat, the bread, the vegetable, the fruit, the coffee and sugar, the seasoning and the soap and candle components.

The meat component does not consist of fat pork or bacon, as those who know nothing of the domestic economy of army kitchens appear to believe. On the contrary there is some variety in the meat component. It consists of 20 ounces of fresh beef, *or* 20 of mutton when the cost does not exceed that of beef, *or* 12 of pork, *or* 12 of bacon, *or* 22 of salt beef, *or* 14 of dried fish, *or* 18 of pickled fish, *or* 20 of canned salmon, *or* 18 of fresh fish.

The bread component consists of 18 ounces of flour, with baking powder when the men have to bake their own bread, *or* 18 ounces of soft bread, *or* 16 of hard bread, *or* 20 of cornmeal.

The vegetable components consist of 2 2-5 ounces of beans, *or* the same amount of peas, *or* 1 3-5 ounces of rice, *or* the same amount of hominy AND 16 ounces of potatoes, *or* 12 4-5 ounces of potatoes and 3 1-5 of onions, *or* 11 1-5 of potatoes and 4 4-5 of canned tomatoes, *or* 4 4-5 ounces of other fresh vegetables, not canned, when they can be obtained in the vicinity or transported in a wholesome condition from a distance.

The fruit component consists of 2 ounces of dried fruit, such as prunes, peaches, or apples. The other components consist of coffee green or coffee roasted, *or* tea green, or tea black, *and* sugar, *or* molasses *or* cane syrup; vinegar, salt and black pepper, and to these are added the soap and candle components.

The slightest knowledge of practical cookery will enable anyone who reads the above to form an idea of what may be called the flexibility of the army ration. The soldier in the tropics is not called on to eat his 12 ounces of bacon *or* go hungry. This *or* is not to be found in the regulation statement of the meat component of the ration, although there are more than half a dozen other important *ors* in it. And there is a variety also in all the other constituents except the soap and candle components.

If the scientist will calculate the elementary constitution of any one of the various diets which may be formed from the flexibility of the army ration, he will find that there is a sufficiency of nitrogen and carbon in each to support the system of the soldier under the heaviest strain of work and exposure. If the proximate principles be calculated, it will be found that many variations may be made in the relative proportions of proteids, hydrocarbons and carbohydrates. But more than all this we *know* that the soldiers of the United States have never gone hungry on their full ration.

Granted then that the ration suffices to sustain the system in the cold of a Montana blizzard, will any one suggest its insufficiency for nutritive purposes where there is little call for physiologic fuel to keep up the animal heat? No, "but," says the critic, for whose information I am writing, "there is too much of the hydrocarbons, too much bacon in the ration to make it a suitable ration for tropical climates." Too much bacon! Too much candle! There is a candle component in the ration but the soldier is not called on to eat it. Nor is he required to eat the bacon if he does not desire to do so.

This leads me to refer to the elasticity of the ration. Its flexibility has already been referred to; but its elasticity also is wonderful. It is so elastic that the soldier may verily eat his candles if he does not require them for other purposes. He may leave the candles in the hands of the subsistence department and if their money value will pay for a can of peaches, or a pound of rice, or so much of any other of a long list of articles kept for sale by the subsistence officers, he can eat his candle component in the form of peaches or rice or any of the other purchasable things. So with the bacon. He is no more required to eat that because it is part of the ration than he is required to eat the candles, but he may transform it into some other article of food which he likes better or which is better for him under the climatic conditions which affect him at the time. So, indeed, with all the other components of the ration excepting only the fresh vegetables, fresh bread, baking powder and dried fruit. Even the fresh beef component may be reduced in quantity and the money value of the quantity not issued for use may be drawn in other articles of sales.

There is even a greater elasticity than this to the rations, for the money credit for components not drawn and used may be applied to the purchase of articles from outside sources, articles not kept for sale by the subsistence department. Thus in probably every company and post mess-hall in the United States, on Thursday, Nov. 30, 1899, there was turkey, with cranberry sauce, on the table, representing so much bacon and other articles of the formal ration not drawn in kind and used but left in the hands of the subsistence department and placed as a cash credit for the payment of turkeys and cranberry sauce or of any other purchase to vary the diet of the soldier. If at any of the posts they did not have turkey and cranberry sauce on that day it was because these things were impossible there but they no doubt had an excellent dinner all the same.

Under the present law and regulations as to the ration, the soldier can have any variation of his diet within certain money value limits which his officers consider necessary for his wellbeing. His ration is fixed by law and it is a most liberal one; but his dietary depends on the intelligent supervision of company officers and the ability of the company cooks. I have stated the law and regulations concerning the ration and its flexibility and elasticity, and the subsistence department may be depended upon to provide the articles necessary to vary the diet. If a change in the dietary is advisable it lies with the company commanders to carry it into effect. If the change is desirable on medical grounds, medical officers should communicate their views to those responsible officers and the change can be effected without difficulty. There is no need to talk about changing the ration to effect a change in the dietary.

But it may be said why not go a step farther and reduce the ration to simpler terms? Why not make it a money value instead of so much of this, that and the other component? A money value to be of equal value at all military stations would have to be a different value at every station. A dollar is worth nothing from the point of view of the ration if there is not a bite of anything within its purchasing radius; but to the stomach of a hungry soldier 20 ounces of fresh beef, 12 ounces of bacon, etc., have a fixed value and when the subsistence department is charged with providing these articles the soldier will fare much better than if the department had only to provide him with so many cents a day for his food.

The United States Army ration is the most liberal ration in the world. It is the best ration for the far northwest of this continent whence come the subzero cold waves to sweep over the country from the upper strata of the atmosphere, and it is the best for the tropics when intelligently utilized. It is the product of the experience of several generations of army officers, and it is the part of wisdom to be slow in urging alterations at the suggestion of people who know that an excess of fatty food is not suitable for a dietary in the tropics and who have just discovered that there are 12 ounces of bacon in the soldier's ration.

But the best dietary for the tropics is a wholly different subject from the ration and we will await with interest the publication of the observations of our officers, line and medical, on the modifications which appear to them to be judicious for Cuba, Porto Rico and the Philippines.

CHARLES SMART,
Lieut-Col. and Deputy Surg-Genl. U. S. Army.

ARMY CHANGES.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., from November 23 to and including Nov. 29, 1899:

James E. Hepburn, acting asst.-surgeon, sick leave extended.

Carl R. Hexamer, acting asst.-surgeon, from Stamford, Conn., to the Department of California.

John F. Jones, acting asst.-surgeon, from Leroy, Ill., to the Department of California.

G. A. McHenry, acting asst.-surgeon, sick leave extended.

Allen D. McLean, acting asst.-surgeon, to examine recruits at Detroit, Mich., in addition to his duties at Fort Wayne, Mich.

Frederick H. Morhart, acting asst.-surgeon, from Washington, D. C., to duty in the Department of California.

William Henry Oates, acting asst.-surgeon, from Mobile, Ala., to duty in the Department of California.

Frederick P. Reynolds, captain and asst.-surgeon, U. S. A., from New York City to duty in the Department of California.

Starling S. Wilcox, acting asst.-surgeon, from Columbus Barracks, Ohio, to the Department of California.

John Mason Williams, acting asst.-surgeon, from the Department of California to Louisville, Ky., for annulment of contract.

Paragraph 18 of Special Orders 202, August 29, 1899, appointing a board of medical officers to meet on the hospital ship, *Missouri*, at Manila, P. I., is revoked.

NAVY CHANGES.

Changes in the Medical Corps of the U. S. Navy for two weeks ending December 2, 1899:

Surgeon L. G. Heneberger, ordered to temporary duty, November 23, in connection with the recruiting rendezvous, Detroit, Mich.

P. A. Surgeon H. N. T. Harris, ordered to New York City December 4, for examination for promotion, and then home and to wait orders.

Medical Inspector M. H. Simons, ordered to the naval recruiting rendezvous, 177 Main Street, Buffalo, N. Y.

Medical Inspector A. F. Price, ordered to be examined for promotion at Washington, D. C., November 28, and then to wait orders.

Surgeon G. P. Lumsden, detached from the naval recruiting rendezvous, Buffalo, N. Y., and ordered home to wait orders.

Medical Inspector D. Dickinson, detached from the naval hospital, Washington, December 1, and ordered home and to wait orders.

Medical Inspector A. F. Price, ordered to the naval hospital, Washington, D. C., December 1.

Asst.-Surgeon F. B. Hancock, resignation accepted to take effect from November 25.

P. A. Surgeon B. R. Ward, ordered to the *Independence*, December 15.

Asst.-Surgeon J. S. Taylor, detached from the *Independence*, December 15, and ordered to the *Scindia*, December 31.

Asst.-Surgeon E. Davis appointed asst.-surgeon November 21.

Surgeon G. P. Lumsden, ordered to temporary duty on the *Franklin* December 1, during absence of P. A. Surgeon J. A. Guthrie, on leave; thence home and to wait orders.

P. A. Surgeon J. Stoughton, order of October 14, detaching from the *Monadnock* and ordering to the *Bennington*, revoked.

Asst.-Surgeon D. G. Beebe, order of October 14, detaching from the *Bennington* and ordering to *Ranger* revoked.

MARINE-HOSPITAL CHANGES.

Official list of the changes of station and duties of commissioned and non-commmissioned officers of the U.S. Marine-Hospital Service, for the two weeks ended Nov. 30, 1899.

Surgeon H. R. Carter, to report at Washington, D. C., for special temporary duty.

Surgeon D. A. Carmichael, leave of absence for 30 days granted by Bureau letter of Aug. 23, 1899, revoked.

Surgeon G. M. Magruder, relieved from duty at Memphis, Tenn., and directed to report at Washington, D. C., for special temporary duty.

P. A. Surgeon H. D. Geddings, to proceed to New York City for special temporary duty.

P. A. Surgeon A. C. Smith, to report at Washington, D. C., for special temporary duty, Nov. 20, 1899. To rejoin station at Norfolk, Va.

Asst.-Surgeon S. B. Grubbs, relieved from duty at Cienfuegos, Cuba, and directed to report at Washington, D. C., for special temporary duty.

Asst.-Surgeon D. E. Robinson, relieved from duty at Mobile, Ala., and directed to proceed to Memphis, Tenn., and assume command of the service.

Asst.-Surgeon F. J. Thornbury, relieved from duty at New York City (Immigration Depot) and directed to proceed to San Francisco, Cal. for duty and assignment to quarters.

Acting Asst.-Surgeon J. E. Bready, granted leave of absence for seven days.

Acting Asst.-Surgeon F. M. Clarke, granted leave of absence for 10 days from November 20.

Acting Asst.-Surgeon D. E. Dudley, Department letter of Oct. 31, 1899, granting Asst.-Surgeon Dudley leave of absence from Nov. 1, 1899, amended so that said leave shall date from November 16.

Acting Asst.-Surgeon F. R. Smyth, granted leave of absence for four days.

Hospital Steward John Achenbach, relieved from duty at Fort Townsend, Wash., and directed to report to the Port Townsend Quarantine station, Wash., for duty.

Hospital Steward G. H. Brock, relieved from duty at New Orleans, La., and directed to proceed to Cincinnati, Ohio, for duty and assignment to quarters.

Hospital Steward M. McKay, relieved from duty at Boston, Mass., and directed to proceed to New York City (Stapleton) for duty and assignment to quarters.

Hospital Steward G. C. Allen, relieved from duty at New York City (Stapleton) and directed to proceed to the Delaware Breakwater Quarantine station for duty and assignment to quarters.

Hospital Steward F. H. Peck, relieved from duty at Baltimore, Md., and directed to proceed to New Orleans, La., for duty and assignment to quarters.

Hospital Steward E. T. Olsen, to rejoin station at Wilmington, N. C.

Hospital Steward R. F. Troxler, relieved from duty at San Francsco, Cal., and directed to proceed to Port Townsend, Wash., for duty and assignment to quarters.

Surgeon C. T. Peckham, granted leave of absence for four days.

Surgeon A. H. Glennan, relieved from duty as quarantine officer at the port of San Juan, Porto Rico, and directed to proceed to New Orleans, La., and assume command of the service.

Surgeon W. J. Pettus, relieved from duty at the Cape Charles Quarantine station, and directed to proceed to Cleveland, Ohio, and assume command of the service.

P. A. Surgeon A. C. Smith, relieved from duty at Norfolk, Va., and directed to report at Washington, D. C., for special temporary duty.

P. A. Surgeon W. G. Stimpson, to rejoin station at St. Louis, Mo.

P. A. Surgeon J. M. Eager, relieved from duty at Detroit, Mich., and directed to proceed to Cincinnati, Ohio, and assume command of the service.

P. A. Surgeon J. H. Oakley, relieved from duty at Evansville, Ind., and directed to report at Washington, D. C., for special temporary duty.

P. A. Surgeon E. K. Sprague, relieved from duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to New York City and report to Surgeon L. L. Williams (Immigration Depot) for special temporary duty.

P. A. Surgeon A. R. Thomas, relieved from duty at the Reedy Island Quarantine station, and directed to report at Washington, D. C., for special temporary duty.

P. A. Surgeon H. W. Wickes, relieved from duty at Cleveland, Ohio, and directed to report at Washington, D. C., for special temporary duty.

P. A. Surgeon J. B. Greene, to report at Washington, D. C., for temporary duty. To rejoin station at Boston, Mass.

Asst-Surgeon H. S. Mathewson, relieved from duty at the San Francisco Quarantine station and directed to report at Washington, D. C., for special temporary duty.

Asst.-Surgeon C. H. Lavinder, relieved from duty as quarantine officer at the port of Ponce, Porto Rico, and detailed as quarantine officer at San Juan, Porto Rico.

Asst.-Surgeon H. C. Russell, relieved from duty at Cairo, Ill., and directed to proceed to Boston, Mass., for duty and assignment to quarters.

Asst.-Surgeon R. H. von Ezdorf, to rejoin station at New Orleans, La.

Asst.-Surgeon L. D. Fricks, to report at Washington, D. C., for temporary duty.

Asst.-Surgeon M. K. Gwyn, relieved from duty at Boston, Mass., and directed to proceed to Chicago, Ill., for duty and assignment to quarters.

Asst.-Surgeon G. M. Corput, to report at Washington, D. C., for special temporary duty.

Asst.-Surgeon T. F. Richardson, relieved from duty as quarantine officer at the port of Nuevitas, Cuba, and directed to proceed to the Reedy Island Quarantine station and assume command of the service.

Asst.-Surgeon W. W. King, relieved from duty at New Orleans, La., and assigned to duty as quarantine officer at Ponce, Porto Rico.

Assistant Surgeon A. W. Korn, relieved from duty at Chicago, Ill., and directed to proceed to Evansville, Ind., and assume command of the service.

Asst.-Surgeon J. M. Holt, relieved from duty at St. Louis, Mo., and directed to proceed to Cairo, Ill., and assume command of the service.

Asst.-Surgeon Elmer R. Edson, to proceed to St. Louis, Mo., for duty and assignment to quarters.

Asst.-Surgeon Clarence W. Wille, to proceed to Boston, Mass., for duty and assignment to quarters.

Asst.-Surgeon John W. Amesse, to proceed to Detroit, Mich., for duty and assignment to quarters.

Asst.-Surgeon Robert L. Wilson, to proceed to San Francisco, Cal., for duty and assignment to quarters.

Acting Asst.-Surgeon B. J. Brown, Jr., granted leave of absence for three days.

Acting Asst.-Surgeon John Frick, relieved from duty at Santiago, Cuba, and directed to proceed to Havana, Cuba, for duty.

Acting Asst.-Surgeon J. M. Lindsley, detailed as quarantine officer at the port of Cienfuegos, Cuba.

Acting Asst.-Surgeon Owen W. Stone, detailed as quarantine officer at the port of Nuevitas, Cuba.

APPOINTMENTS.

Elmer R. Edson of Indiana, Clarence W. Wille of Pennsylvania, John W. Amesse of Michigan, and Robert L. Wilson of Texas, commissioned as assistant-surgeons.

HEALTH REPORTS.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended Dec. 1, 1899:

SMALLPOX—UNITED STATES.

Illinois: Cairo, November 21, 2 cases.
Louisiana: New Orleans, November 18 to 25, 6 cases.
Massachusetts: Chelsea, November 18 to 25, 1 case.
Ohio: Cleveland, November 18 to 25, 8 cases.
Tennessee: Nashville, November 18 to 25 3 cases.
Virginia: Portsmouth, November 18 to 25, 5 cases, 2 deaths.

SMALLPOX—FOREIGN.

Austria: Bohemia, Prague, October 28 to November 4, 7 cases.
Belgium: Antwerp, October 28 to November 4, 7 cases, 2 deaths.
Brazil: Rio de Janeiro, October 12 to 20, 93 cases, 67 deaths.
Canada: Ontario, November 10, 20 cases; Quebec, August 21 to November 27, 138 cases, all in Kamouraska County.
Mexico: Mexico, October 29 to November 5, 3 cases, 2 deaths; Vera Cruz, November 8 to 24, 4 deaths.
Russia: Moscow, October 22 to 28, 2 cases, 1 death; Odessa, October 28 to November 4, 1 case; Warsaw, October 22 to November 4, 7 deaths.
Turkey: Constantinople, October 25 to November 6, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, October 12 to 20, 3 deaths.
Cuba: Havana, November 16 to 23, 10 cases, 4 deaths; Puerto Principe, November 18, 1 case, soldier.
Mexico: Vera Cruz, November 8 to 24, 3 deaths.

CHOLERA.

China: Hongkong, October 1 to 7, 2 cases, 1 death.
India: Kurrachee, October 15 to 21, 1 death.
Japan: Yokohama, October 7 to 14, 1 case.

PLAGUE.

Egypt: Alexandria, Nov. 6, 1 case.
India: Kurrachee, October 14 to 21, 7 cases, 4 deaths.
Spain: Cadiz, November 27, 1 suspect case.

CHANGE OF ADDRESS.

Arnold, J. D., from 530 Sutter to 1296 Van Ness, San Francisco, Cal.
Beach, J. C., from 327 State St. to 3007 Cottage Grove Ave., Chicago.
Du Bois, J. A., from Sauk Center, Minn., to Greenwich, Conn.
Dinwoodie, Wm., from 975 Reaney to 698 Arcade, St. Paul, Minn.
Davidson, T. W., from Abingdon to Fairview, Ill.
Goodwin, H. F., 59 S. Hermitage to 214 Marshfield Ave., Chicago.
Goldnamer, W. W., from 3454 Indiana to 103 State, Chicago.
Harbeck, J. H., from Boulder, Colo., to Cuernaraca, Mexico.
Hoxie, W. E., from Garner to Belmond, Iowa.
Hoelcher, J. H., from 284 Belden Ave. to 1669 Sheridan Road, Chicago.
Hawkes, W. H., from 734 17th St., N. W., to 1317 Columbia Road, Washington, D. C.
Irwin, E. A., from Cook County Hospt. to People's Inst. Bldg., Chicago.
Jenckes, H. D., from Jasper to Pipestone, Minn.
Jones, C. C., from John Sealy Hospt. to 2117 Market St., Galveston.
Leenhouts, A., from Chicago to Holland, Mich.
Lambright, S., from South Lebanon to Lees Creek, Ohio.
Morton, G., from 14 E. 11th to 707 Highland, Kansas City, Mo.
McNamara, J. G., from 366 Wabasha to 396 Endicott Arc., St. Paul, Minn.
Perry, T. B. from Titusville, Fla., to U. S. Marine-Hospital Service, Baltimore, Md.
Rogers, W. B., from Chicago to Oakwood Sanitarium, Lake Geneva, Wis.
Richter, L. M., from Bethany, Mo., to 701½ S. Broadway, Los Angeles, Cal.
Sewell, S. G., from New Burlington to Greenville, Ohio.
Straley, S. B., from Andover, N. J., to Cocoa, Fla.
Tinker, M. B., from 2131 N. 16th to 2228 N. 17th, Philadelphia, Pa.
Verbryck, G. G., from Cambria to Green River, Wyo.
Wright, John, from Clinton, Ill., to Roseburg, Ore.
Westbrook, M. H., from Cleveland to Olmstead Falls, Ohio